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MAGAZINE

HISTORY | MYSTERY | SCIENCE

THE MAYA

**The Royal Path
to the Afterlife**

**Pakal and His
Red Queen**

**Maya
Gateway**

**to the Watery
World Below**

**The Great
Collapse**

**What Happened
to the Maya?**

PLUS
**Journey to
Knighthood
and Living by a
Code of Chivalry**

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SPOTLIGHT: THE MAYA

THE ancient Maya created one of the most famous civilizations in the world. Even today, people are still astounded by their monumental city structures at sites like Uxmal, Tikal, and Chichén Itzá. We trek through these awe-inspiring Mesoamerican locations where elite priests and powerful royals managed their people and lands.

The Maya had advanced knowledge of math, astronomy, and agricultural techniques, and in this issue we look at how they applied their skills so cleverly to life. They also developed their own writing system and used the hieroglyphs to tell their factual and mythological stories on decorated temple walls, pottery, and monuments. This special July-August issue reveals some of the rich religious beliefs held by the ancient Maya to explain how

humanity arrived here and what happens in the Underworld when our days are done.

This issue provides insight on some of the darker ancient Maya traditions, such as bloodletting and human sacrifice.

Thankfully, those practices have been cast aside by later generations, but other, more peaceful actions, such as creating foamy chocolate drinks and caring for stingless bees, are still cherished by their descendants today.

It seems the ancient Maya people had everything going for them... but then their civilization suddenly stopped. They abandoned their



most precious city centers and stopped writing about their rulers. Why the ancient Maya civilization fell is one of the greatest archaeological mysteries. So, of course we explore the most popular, science-backed beliefs about what led to their dramatic end.

While the people have left us, their stories and influence remains. Whether it is through genetic ties, curiosity, a visit to the amazing sites, or by incorporating their tasty crops into our own kitchens (tomatoes, chilies, chocolate...the list goes on), everyone has felt the impact of the ancient Maya! ■

ALICIA McDERMOTT

Editor, Ancient Origins Magazine

EXPERTS IN THIS ISSUE...



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James O'Kon is an author, lecturer, award-winning structural engineer, and archaeo-engineer who has explored and researched Maya technology for forty years.



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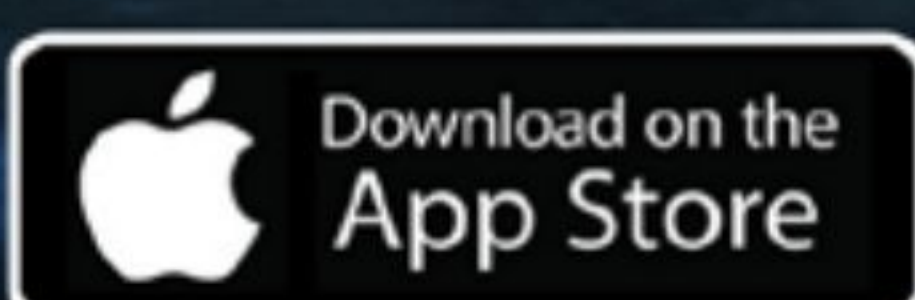
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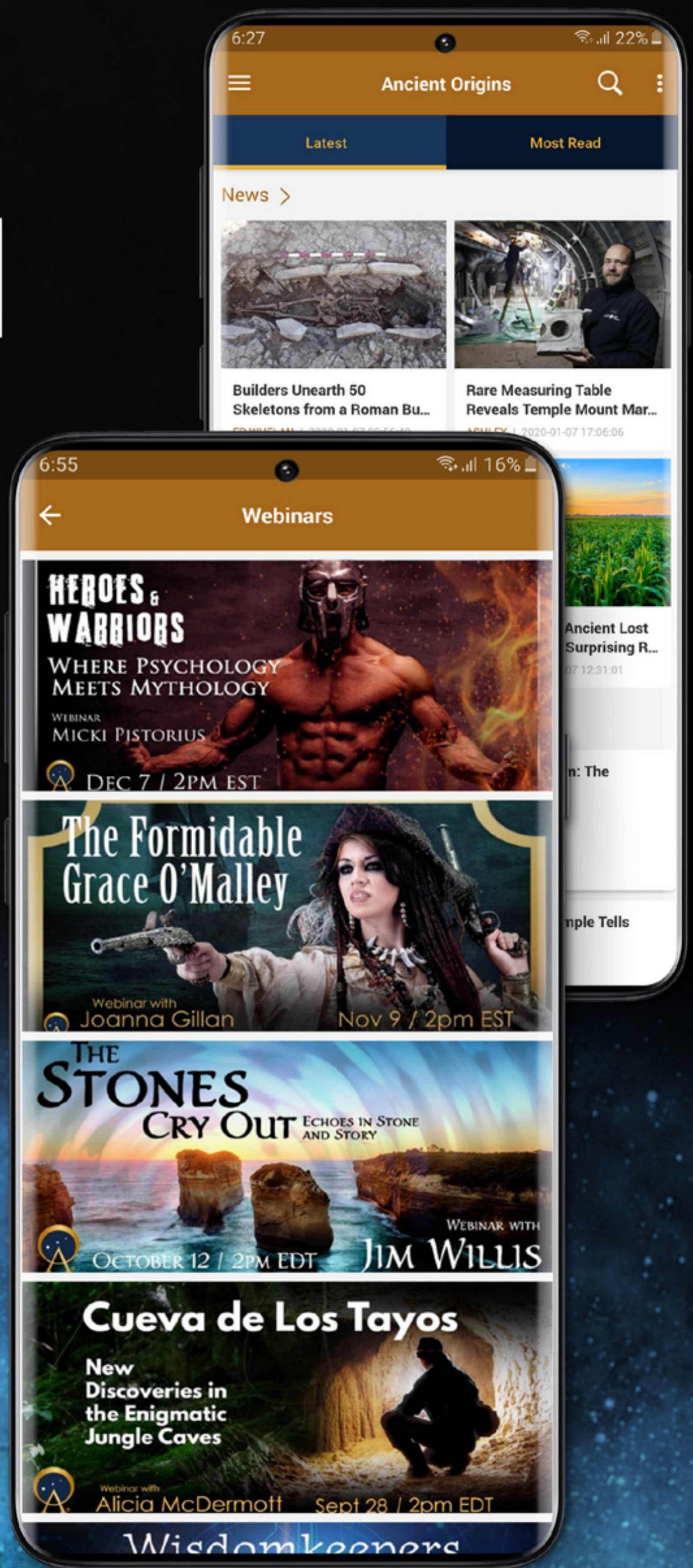
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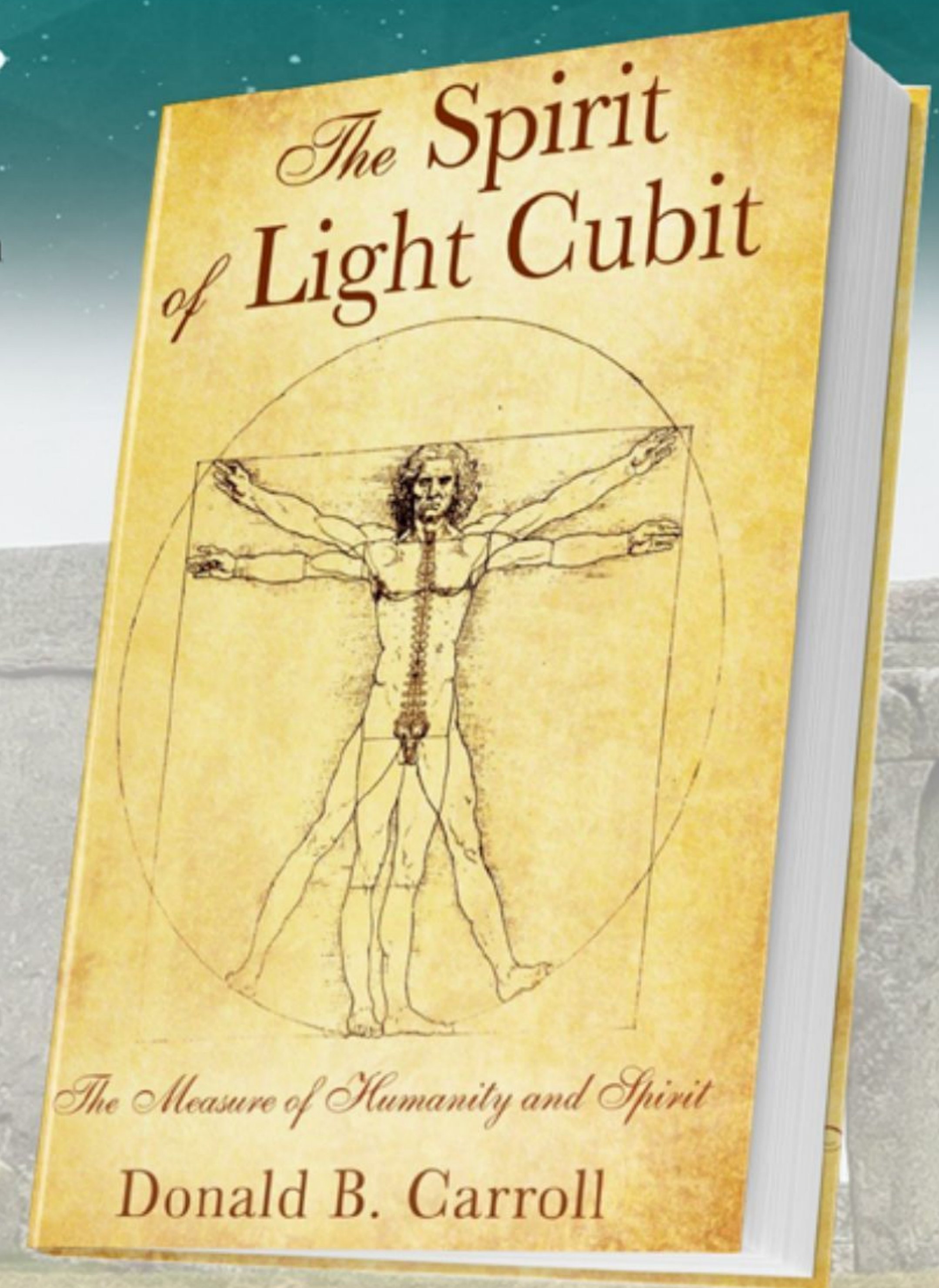
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II By Micki Pistorius

Ancient Pipes Reveal What Natives Americans Were Smoking

By investigating a 1430-year-old pipe, a multidisciplinary team from Washington University made discoveries about the smoking habits of precontact Native Americans who once inhabited what is now Washington State. According to Professor David Gang, they found residue from a plant popularly known as smooth sumac (*Rhus glabra*), which showed that people used plants that did not contain nicotine. It is the first evidence that Native Americans were

smoking something other than tobacco, although the *Rhus Glabra* may have been mixed with tobacco for its medicinal qualities and to improve the flavor of the smoke.

As part of the study, the researchers also examined a pipe that dates to after the time when Native Americans had made contact with Europeans. The team established that this pipe contained tobacco known as *Nicotina Rustica*, which was widely grown by many

tribes on the East Coast. This is important for two reasons; one is that it shows that Native Americans did not only use plants grown in their territory but also traded with others along long-distance trade networks. It also counters the view that Native Americans abandoned the use of natively grown tobacco after the introduction of commercially grown versions of the plant were introduced by traders of European heritage.





Left: Roman skull with an obol in the mouth.
Above: Charon's Obols are too thin for normal use, and are often found in burial sites. 5th-1st Century BC

Below: Execution by guillotine in 1793 during the Reign of Terror

Children's Bodies Discovered with Charon's Obol

A long-standing local belief that a lost children's graveyard was located somewhere in the Church Mountains area in Poland was confirmed when the decaying remains of 115 children were discovered at Jezowe near the town of Nisko. In 1604 this area held a large parish church, a rectory, a school, and a cemetery, which had probably existed since 1590.

When archaeologists looked more closely at the bodies, they found many of the children had coins in their mouths. Archaeologist Katarzyna Oleszek stated this is sign of the belief in "Charon's obol," which comes from a pre-Christian burial tradition, practiced as late as the 19th century by Pope Pius IX.

Charon's obols were coins supposedly used by the ancient Greeks for funerary purposes. The belief is that these coins were used by the 'spirit' or 'ghost' of the dead to pay for their journey across the River Styx into the Underworld. In Greek mythology, the ferryman of the dead is a figure called Charon.



Executed Victims Found Entombed in Walls of Paris Church

Four wooden ossuaries hidden in the walls of the 19th-century Chapelle Expiatoire in Paris were found to contain the remains of victims of the Reign of Terror. The chapel's administrator noticed anomalies in the walls between the columns of the lower chapel and archaeologists inserted a tiny camera through the stones of the walls of the chapel.

The Chapelle Expiatoire is located close to the Place de la Revolution, (now Place de la Concorde) where countless individuals were beheaded by the guillotine. The chapel was built on the grounds of the Madeleine Cemetery, where many of those who had been publicly executed, including King Louis XVI and his queen, Marie Antoinette, were buried.

But since it is believed that most of the victims of the Reign of Terror were relocated to the catacombs beneath the Paris streets, how did it come to be that the bones were found in these walls? The Chapelle was built by King Louis XVIII to commemorate the memory of his dead brother and it is believed that the king ordered that "no earth saturated with victims [of the revolution] be moved from the place for the building of the work." Excavation is scheduled for 2021. ■

ORIGINS RISING



**J. DOUGLAS
KENYON**

For a quarter century, J. Douglas Kenyon was editor and publisher of Atlantis Rising Magazine. For more information visit the web site AtlantisRising.com

According to May press reports, billions of dollars' worth of lost Nazi loot may have been located. Though greeted with skepticism by some experts, the story does include sensational details that—even

in a time of pandemic, economic crises, and social turmoil—have excited media around the world.

At the end of WWII, the Nazis are purported to have hidden an estimated 28 tons of gold, stolen art, and other treasures in numerous secret locations. The details appear in the meticulous diary of an anonymous Waffen SS officer writing under the pseudonym 'Michaelis.' One site already renowned for WWII treasure, the Hochberg Palace in Roztoka, near Wałbrzych, Poland, is thought to be hiding an enormous cache, almost 200 feet below ground at the bottom of an ancient and disused well.

Many of the lost treasures, reportedly, were secreted shortly before the war's end by Gunther Grundmann, German heritage conservator of Lower Silesia. Working under the direction of Hitler henchman Heinrich Himmler, Grundmann was trying

NAZI PLUNDER COMES TO LIGHT?

to hide all Nazi-held treasure from the rapidly advancing, and much feared, Red army. 'Michaelis,' the diary's author, worked for Grundmann.

According to TheFirstNews.com, a prominent Polish news organization, the diary had been held since the war by a mysterious thousand-year-old German secret society in the small town of Quedlinburg in Saxony-Anhalt. It has now been offered to the Polish nation as a gesture of atonement for the war.

gave rise to the Nazi party, the history of the Quedlinburgers goes back to the early 10th century.

While many academic authorities dismiss as fanciful the suggestions that dark metaphysics could have been central to Nazi thinking, some believe hard evidence may yet emerge, and the Quedlinburg diary may help to fill the blanks.

Most theories about occult influence on the Third Reich focus on Nazi SS chief Heinrich



Bundesarchiv, Bild 101I-729-0001-23 / Meister / CC-BY-SA 3.0

In the 1930s and '40s, Quedlinburg was the scene of Nazi cult worship, but unlike the latter-day—and overtly political—Thule society that

Himmler, who, himself, clearly subscribed to such ideas. Indeed, Himmler believed himself the reincarnation of 10th-century Duke of Saxony



Heinrich Himmler (center) at Quedlinburg SS ritual in 1938



The Hochberg Palace in Roztoka, near Wałbrzych, Poland

and King of East Francia, Henry the Fowler, credited with founding the first medieval German state. Himmler, as is well known, liked to be called 'King Henry.' In keeping with his own Aryan-centric beliefs—essentially a Teutonic inversion of romantic Holy Grail mythology—he established and maintained a personal castle at Wewelsburg, complete with Round Table, monastic cells, and coats-of-arms for his chosen *Gruppenfuhrer*, the spiritual elect of the elect. The castle, near Paderborn, was intended by Himmler to become the capital of a future SS state, with Nazism its virtual religion. Himmler also paid special attention to Quedlinburg. Photos of his participation in SS rituals there in 1938 can be found on the internet. As mentioned, the treasure diary describes art stolen from throughout Europe, including religious artifacts collected by the *Ahnenerbe* organization (Himmler's think tank), and connected to SS special projects.

According to esoteric historian Mark Stavish, Himmler's cadre would meet at planned ritualistic intervals in the Wewelsburg North Tower, and in its crypt where an 'eternal' flame burned. Renovated by slave labor from a nearby concentration camp, esoteric symbolism was clearly evident throughout. The entire town, in fact, was to be rebuilt to radiate in concentric circles, with the main road forming the shaft of a spear, and the triangular castle its point. Himmler believed the castle lay on a mystical power grid, formed on what dowsers sometimes call 'ley' lines, and was the 'center of the world' (*Mittlepunkt der Welt*), a familiar theme in Nordic mythology.

Many of the darkest banners, we know, are simply twisted or inverted versions of symbols that originated in ancient wisdom. The Nazi swastika, for one, is the reversed form of a symbol held sacred in many Eastern religions for thousands of years. According to Mark Stavish, when Hitler adopted

the swastika as the Nazi symbol, he turned it counter-clockwise, thus making it—intentionally or otherwise—the traditional symbol of death.

As fans of *Star Wars* might say, the history of the world is a tale of eternal warfare between secret societies—where the priests of the 'dark' side attack the priests of 'good,' only to be foiled by sabers of light. The idea did not begin with George Lucas. For millennia, it has been the subtext, more or less, of many religions. But in today's world, of at least 50 shades of grey, such themes are usually seen as too simplistic to be taken seriously by the more 'sophisticated' among us. But for those who have 'ears to hear,' the ancient music plays on. Like the 'variations on a theme,' with which some composers pay tribute to their predecessors, wars of good, evil, and magic—far older and more profound than our attention-deprived society can comprehend—continue to entrance us. ■

THE GREMLIN – HERE TO BLIGHT OUR TECHNOLOGY



CHARLES CHRISTIAN

Charles Christian is a barrister and Reuters correspondent turned writer, award-winning tech journalist, radio presenter, podcaster, blogger, storyteller, and sometime werewolf-hunter who presents a weekly podcast: the Weird Tales Radio Show

Unlike all the other creatures we have encountered so far in this series, the gremlin is the new imp on the paranormal block – one hardly anyone had ever heard of just 100 years ago,

but one who now gets blamed for every mishap we encounter in the modern world—from trains running late to our computers crashing.

In terms of their origins, they can be traced back to the early days of the Royal Air Force in World War One, when engineers and pilots would notice that sometimes aircraft would not fly properly for a reason that was neither a mechanical problem nor human error. But what was it?

An English magazine article in 1917 referred to “the existence of a horde of mysterious and malicious spirits whose purpose in life was to bring about as many as possible of the inexplicable mishaps which, in those days as now, trouble an airman’s life.” By the early 1920s, Royal Air Force

(RAF) pilots stationed in Malta, the Middle East, and India were privately talking of “gremlins” attempting to harm them and their aircraft, and in 1923, a British pilot who crashed into the sea specifically blamed gremlins for the accident, saying they had caused cockpit chaos and engine sabotage.

An issue of the journal *Aeroplane* published in 1929 contained a poem that described gremlins as a flyer’s nemesis and by 1939, the word had made its first appearance in *Brewer’s Dictionary of Phrase and Fable*. By 1942, the notoriety of gremlins had spread to the United States where first Walt Disney and later Roald Dahl popularized the name and their antics. After that, books – including Dahl’s own children’s novel *The Gremlins*, comics, and cartoons followed. Then, much later, came a 1963 television episode of *The Twilight Zone*, “Nightmare at 20,000 Feet,” starring a young William Shatner seeing an evil gremlin attempting to rip an engine from the wing of the airliner in which Shatner is flying, followed in 1984 by Steven Spielberg’s hit film *Gremlins*.

But where does the name gremlin come from? Despite being such a recent addition to the canon of fabulous creatures, there is no universally accepted explanation. Some say it derives from the Old

English word *gremian*, meaning to vex or annoy, while others say it is a mashup between goblins and *Fremkins* beer, which was widely available on RAF bases in the Middle East in the 1920s.



What do they look like? Curiously, most victims may know gremlins are at work, but few see the perpetrators of the mischief, so descriptions vary.

They are typically said to be between six inches and two feet in height, with skin that is blue, green or grey in color. They also have hairy, bat-like ears, and wear a wide variety of colorful and eccentric clothing, while those who plague aircraft have unusually large feet with suction pads on their soles so they can walk along the outside of aircraft while they are in flight. Incidentally, young female gremlins are called *flipperty-gibbetts*, while baby males are *widgets*.

And, as mentioned at the outset, they have diversified over the years, spreading their malign influence from just aircraft to all types of modern technology. Jacqueline Simpson and Steve Roud in their *Oxford Dictionary of English Folklore* (2003 edition) say there is even a sub-species of gremlin that specializes in creating typos and misprints in books, magazines, and websites, but I find that heard to bee leave. ■

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THE HIDDEN STEPS TO BECOMING A MEDIEVAL KNIGHT



|| BY WU MINGREN

THE KNIGHT is one of the most iconic figures of the Middle Ages. Their reputation evolved as time went by, but it was only during the High Middle Ages (from around 1000 to 1300) that the image of the knight we are so familiar with today emerged.

Knights were originally professional cavalry warriors. While this may not be reflected in the English word, it is in the French 'chevalier', and the Spanish 'caballero'. These words trace their origin to the Latin 'caballus', which means 'horse'. The English 'knight' ('cniht' in Old English) has West Germanic roots and is related to the Dutch and German 'knecht'. Rather than denoting a cavalryman, these words mean 'servant' – another role

performed by this social class, especially during their training.

FROM BRUTES TO CHIVALROUS NOBLES

During the Early Middle Ages, which lasted from around 500 to 1000 AD, knights were considered violent brutes by most people. In exchange for their military service, the knights were given land or allowed to plunder, burn, and rape in the villages where they battled.

Things began to change during the 11th century. Around the time of the Norman conquest of England in 1066, the knight began to take on the form we are familiar with today, i.e. a heavily armored, mounted warrior from a noble background. It was also around this time that the chivalric knight came into existence.

Chivalry was the professional code of conduct that medieval knights adhered to. While the contents of this code differed from one commander to another, some of the most common elements include courage in battle and loyalty to one's feudal or military superiors and comrades - practical from a military point of view.

The code of chivalry developed to include values such as piety, generosity to the poor, and mercy for defeated foes. These values were endorsed by the Church and found their way into the romantic literature of that era, which was targeted at young men who were knights in training.

As long as a warrior could maintain the cost of his horse and arms in the Early Medieval period he could be a knight. During the High



Medieval period, however, nobility and knighthood merged, and it became a hereditary privilege. The first step to becoming a knight during this period was to be born into a noble family.

While the majority of medieval knights were men, there were exceptions. The Knights Templars and the Knights Hospitallers, the two foremost military orders during the Crusades, are said to have had warrior nuns in their ranks.

TRAINING FOR KNIGHTHOOD

The training to become a knight began as early as the age of seven, when a boy would be sent to the castle of another knight or lord. These were often relatives or lords to whom the boy's father owed allegiance. The boy would serve as a page in the household and begin his service as an assistant to a squire.

Physical fitness, combat training with wooden weapons, and caring

for a horse were essential aspects of a page's training. These lessons were aimed at preparing them for life as a mounted warrior. Pages were also instructed in falconry, hunting, dancing, and music - activities that befitted a nobleman. They also received lessons in religion and were taught reading, writing, and arithmetic. The training of the pages shows that knights were expected to be cultured men of high society as well as warriors.

At about the age of 14, the knight in training was considered a young man. He would be formally promoted to a squire during a religious ceremony. A bishop or a priest would give a consecrated sword to the new squire, who would then swear to use it for honorable purposes or to defend the faith.

The training of a squire placed much greater emphasis on martial prowess. This included combat practice with real

weapons, horsemanship, and skills that may come in handy when besieging another castle, including climbing, swimming, and athletics.

The word 'squire' is derived from the Old French 'esquier' and literally mean 'shield carrier'. Indeed, some of the jobs of the medieval squire were to maintain his lord's weapons and armor, assisting his lord when he put on his armor, and to ensure the gear was in good order. This was important, as a knight's equipment was expensive and proper maintenance was necessary so that it could be used efficiently on the battlefield. Another important task was attending to the lord's horses. The squire also accompanied his lord to the field of battle in times of war.

He also continued to prepare for his life as a nobleman with lessons in music and dancing, court etiquette, and jousting. A squire had to learn the code of chivalry, as well as the rules of heraldry.



They played some popular court games, such as chess, checkers, and backgammon for fun and to develop strategic thinking.

Other chores for a squire included: managing the wine cellar, carving meat at meals, waiting tables during banquets, assisting a lord during feasts and other ceremonies, and attending to the rooms of the castle. These acts of service were intended to teach the squire humility, an important virtue in the chivalric code, and show him how to lead his future household.

A knight-to-be often served as a squire until he turned 21. However, a squire could be made a knight earlier as a reward for exceptional courage on the battlefield. There was no guarantee, however, that a squire would definitely become a knight. For one thing, he had to acquire his own armor and weapons. Sometimes he gained the equipment from his lord, looted it on the battlefield, or won it in a tournament. More often, however, he had to buy it – and even the lower quality equipment was expensive. Many squires could not afford to become knights.

Squires who could not meet these expenses, or were too old to be knighted, became known as ‘arma patrina’. Although these men had not undergone the ceremony of knighthood, they were still allowed to carry a lance and a shield.

THE KNIGHTHOOD CEREMONY

The knighthood ceremony usually took place during a Christmas or Easter feast or on other special occasions, such as the wedding of a noble or monarch. The knighthood

could be conferred onto a squire by a king, nobles, the clergy, or the squire’s father (if he were a knight himself).

On the eve of the ceremony, the squire would take a ritual bath and be dressed in a piece of white clothing, symbolizing purity. He wore a red robe over this - a sign of his nobility - and black shoes to symbolize death. The squire would spend the night in silent prayer in the chapel of the castle or a church.

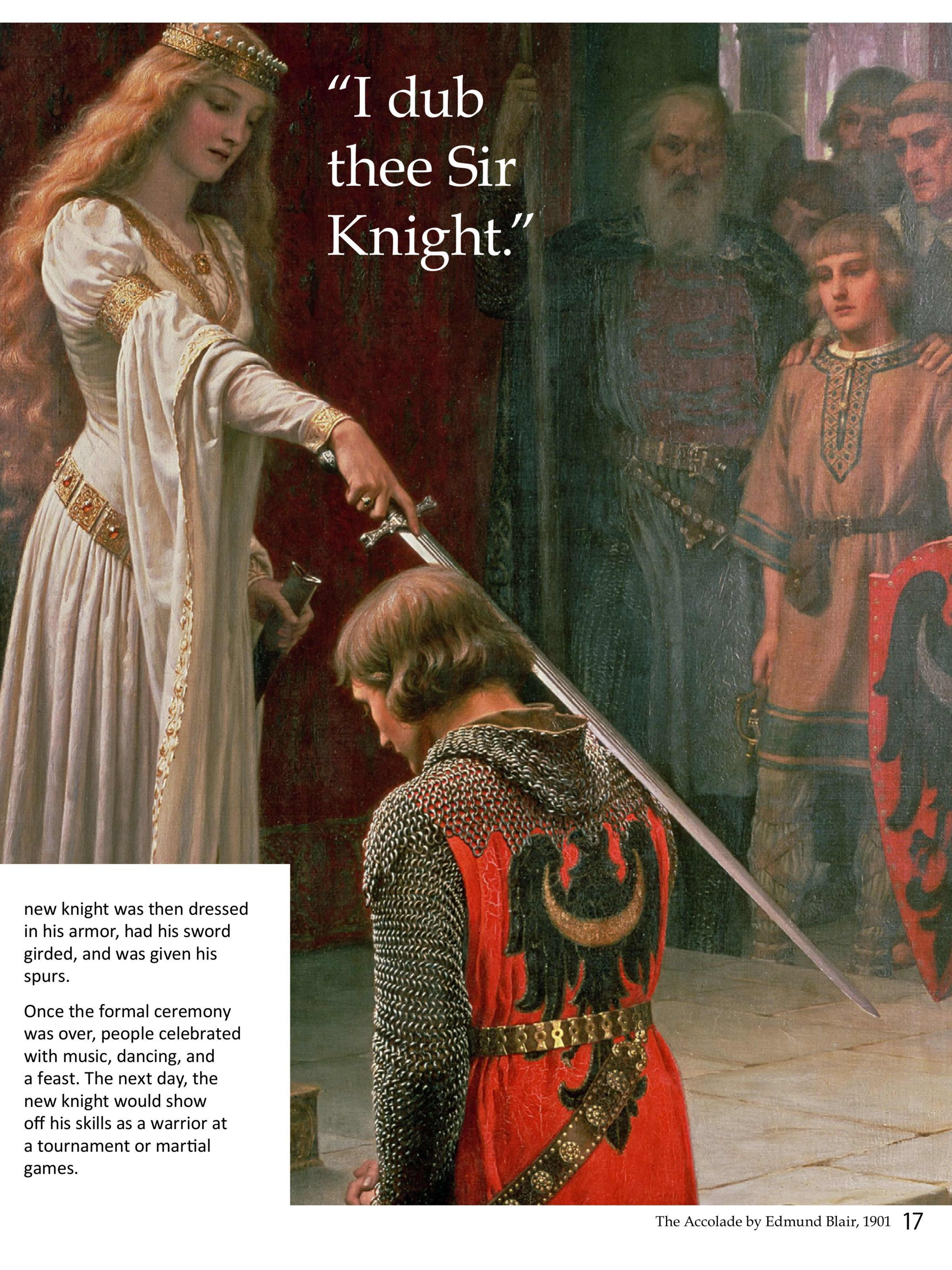
The accolade took place the following morning. This was the ceremony when knighthood was conferred onto the squire. It began with Mass and included a sermon about a knight’s duties and responsibilities.

A sword and shield which had been blessed by a priest would then be brought forward by the squire’s sponsor and given to the lord conducting the ceremony. After being presented to the lord, the squire took his vows and swore allegiance to his lord. The vows taken by the would-be knight reflected the code of chivalry. To break this oath would mean committing a crime against God, and any knight who did so would face divine retribution and eternal damnation.

The final part of this ceremony was the dubbing, after which the

squire officially became a knight. The dubbing may be conducted by a fellow knight, a noble of higher rank, or a king or queen. The knight/lord who conducted the ceremony presented the squire with the sword and shield, then he would strike him on the shoulder with the side of the hand or the flat of a sword, while saying “I dub thee Sir Knight.” The





“I dub
thee Sir
Knight.”

new knight was then dressed in his armor, had his sword girded, and was given his spurs.

Once the formal ceremony was over, people celebrated with music, dancing, and a feast. The next day, the new knight would show off his skills as a warrior at a tournament or martial games.

A knight enjoyed many privileges, including the right to own land, to bear arms inside a church (since they were supposed to be the defender of God and Christianity), and to sit at the high table with other nobles and kings during banquets. It was the knight's right to own land that formed the basis of medieval feudalism.

A lord would grant a fief (normally a piece of land with peasants) to a knight in exchange for his military service. The enfeoffed knight (known also as a vassal) served his lord for a period of time (normally 40 days a year) and could become a lord himself by enfeoffing other knights.

At times, a scutage ("shield money"), instead of military service, was paid to the lord. This became increasingly popular during the 12th and 13th centuries due to the expansion of the monetary economy in Europe, the increased reliance on mercenaries to fight wars, and the decline in the importance of cavalry. ■

The Château de Trécesson is a medieval castle in the Brittany region of France.

Like other fortified houses, this château has gateways, watchtowers, enclosing walls, and even a moat for protection.

Such manors were the family seat of a knight.



Audrey Le Tiec/CC BY SA 3.0

THE KNIGHTS CODE OF CHIVALRY

IN THE SONG OF ROLAND (1040-1100)

To fear God and maintain His Church
To serve the liege lord in valor and faith
To protect the weak and defenseless
To give succor to widows and orphans
To refrain from the wanton giving of offense
To live by honor and for glory
To despise pecuniary reward
To fight for the welfare of all
To obey those placed in authority
To guard the honor of fellow
knights
To eschew unfairness,
meanness, and deceit
To keep faith
At all times to speak the truth
To persevere to the end in
any enterprise begun
To respect the honor of women
Never to refuse a challenge
from an equal
Never to turn the back upon a
foe



Peleş Castle

In the spring of 1866, Prince Karl of Hohenzollern-Sigmaringen spent a night at the Sinaia Monastery and was so in awe of the landscape of the Carpathian Mountains that he decided to build a castle there. Six years later, construction of Peleş Castle commenced, and it was eventually completed by 1883. Peleş was the first electrified castle in Europe and the entrance hall has a mobile glass ceiling motored by electricity. An elevator and a central heating system were also modern features of this magnificent castle. Peleş Castle, the summer residence of the royal family of the Kingdom of Romania, became the property of the State when the kingdom was dissolved. ■



Spotlight

The Maya







MAYA

AGRONOMISTS

CHANGING THE WORLD WITH FOOD

|| BY JAMES O'KON



The Maya were the longest-lived civilization in history. Their history lasted for 3,500 years and traced parallel timelines with other ancient civilizations. They began their civilization in 2500 BC in parallel with the ancient Sumerians and it terminated in 900 AD, during the reign of Emperor Charlemagne, but their histories did not converge because the Maya and other world civilizations did not realize that each other existed. The Maya were the phantoms of history.

EXPERTS OF AGRONOMY

The Maya developed advanced sciences

in astronomy, mathematics, and one of the five original written languages in the world. But their greatest science was agronomy. In fact, they were the greatest agronomists in world history. They developed cultivars that nourished the Maya people, enabling their rapid growth into a society of profound thinkers.

For thousands of years, Maya agronomists created cultivars or plant varieties of unequalled quality by combining science with selective plant breeding. The goal was to develop cultivars that enhanced the lifestyle of their populace.

After the discovery of America, Spanish explorers encountered Maya cultivars and they adopted these, disseminating them across the world. The adoption of the unique cultivars by peoples in Afro-Eurasia altered history.

IN DEMAND AROUND THE GLOBE

In the 16th century, Maya cultivars were espoused by cultures across the globe. By 1530, tomatoes were growing in Italy; maize was an African crop by 1590; papayas were grown in Asia by 1530, tobacco in 1520 (and even turkeys in England by 1520). In 1550, Europeans introduced cassava and the peanut to tropical Southeast Asia and West Africa.

This exchange of cultivars, animals, and ideas become known as the Columbian Exchange. Scholars believe that the ecological transformation set off by the

Columbian Exchange was one of the events that established the modern world.

The greatest lasting impact of the Columbian Exchange lies in the introduction of Maya cultivars to the rest of the world. World-changing Maya cultivars include: tobacco, cotton, turkeys, maize, sweet potatoes, tomatoes, peanuts, cassava, cacao, sunflower seeds, papaya, vanilla, chili peppers, beans, and squash.

These cultivars have made important changes to the food security of the entire world. As well, the introduction of new crops from the New World has had a dramatic impact on demographics.

Scholars believe that the ecological transformation set off by the Columbian Exchange was one of the events that established the modern world



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26 Above: Portuguese trading animals in Japan at a time known as the Columbian Exchange
Right: Seeding, tilling, and harvesting maize



Mesoamerican terraces such as these Inca-era formations on Taquile Island, Peru, are still used to grow traditional Andean staples such as quinoa and potatoes, alongside wheat, a European introduction



CHANGING THE WORLD WITH FOOD

Maya cultivars affected politics, laws, customs, technology, and financial empires. They have spurred armed revolutions, initiated rebellions, altered political boundaries, inspired industrial, technical, and scientific revolutions, started college systems, promoted deadly habits, sparked sporting empires, and changed cultural speech, music, and lifestyles.

An overview that some Maya cultivars had in changing world history is truly amazing. Following are some of the important world changes resulting from cultivars invented by an ancient civilization:

The Chili pepper has become the world's most popular spice. Maya chilies made changes in the tastes of food around the world. What would Indian or Thai food be without chilies?

Chocolate is a popular sweet world-wide and gifting chocolate has included this heathen cultivar into the favorite foods during Christian Holidays.

Maya cotton is the world's favorite fiber and has altered history; initiating the Industrial revolution, tragically increasing slavery, and starting the American Civil War. It inspired the land-grant college system (the sale of federally controlled land to fund educational institutions), turning the USA into a technological superpower. Cotton clothes 90 percent of the world's population.

Maize is the world's favorite grain and feeds billions of people each day. Maize effected significant changes in history including the food tastes of the world, the creation of a whiskey with both a pedigree and a gangster reputation, and it even started NASCAR.

The peanut played a key role in electing America's 39th president. It is a favorite in candies and peanut-butter-and-jelly sandwiches.

Attempts to grow the pineapple in Europe resulted in the invention of technology for greenhouse systems that led to glass high-rise buildings in modern cities.

Tobacco, the world's favorite narcotic, has killed more people than all the wars and plagues in history. Tobacco accounts for the demise of 100 million people in the 20th century.

Maya cultivars affected politics, laws, customs, technology, and financial empires

The tomato is the world's favorite fruit. The delicious red fruit has a pedigree in Italy, but in Europe, it was considered poisonous until the 19th century.

Vanilla is the world's favorite flavor. A member of the orchid family, vanilla flavoring is popular all over and created the legendary 'nana pudding' – a vanilla-flavored custard in the southern United States.

TRADE BROUGHT CULTIVARS TO THE WORLD, CREATING BOOMS

In the Columbian Exchange, Europe gained new sources of food and fiber. This great exchange between the New World and the Old World altered the history of our planet forever.





Dried and ground chili peppers
in a Maya market in Mexico



Maya woman weaves cotton with her waist loom on
a street in San Antonio Palopó, Guatemala



The Maya's Stingless Bees

For thousands of years, species of stingless bees, known as *Melipona beecheii* and *Melipona Yucatán ica*, were cultivated by people of Central America, particularly the Maya.

The ancient Maya perfected a particular style of beekeeping (or apiary), partly to obtain the bees' honey but also because they considered the bees to be sacred. Many Maya families kept log-hives near their homes. While the temple had 1000-2000 log-hives, a Maya family would probably have around 50.

The Maya were expert practitioners of bee husbandry, and honey was an essential forest resource, as a sweetener, as an antibiotic, and as an ingredient in mead.

Cultivating the bees represented a unique symbiotic relationship with nature. Maya beekeepers would harvest the honey and wax, and in exchange protect the bees from predators and harsh weather and ensure the hives were well maintained in special logs. Great care was given to ensure that no bee was harmed in the extraction of honey; however, if a bee were accidentally killed, it would be properly buried under a small leaf. The harvesting occurred twice a year during a festival that was accompanied by much drinking of honey mead.

Changes included the death of many of Native Americans, the re-peopling of the western hemisphere by European immigrants, the worldwide improvement in food security, and significant historical changes.

Maya cultivars have combined to change how the world is nourished. The world population is currently over seven billion and Maya cultivars currently feed 60 percent of the world's population. Cassava alone feeds 500 million people daily!

The introduction of Maya cultivars induced a surge in world population. In the year 1500, the world population stood at 425 million. By 1600 it was at 545 million, reaching 610 million in 1700. Thereafter, due to enhanced nutrition from Maya cultivars, population increased at a faster rate. By 1750 the population stood at 720 million; reaching one billion in 1810 and 1930 it was at two billion. The three-billion mark was passed in 1960, in 1980 it passed four billion, in 1990 the five billion mark was passed. In 2000, the population passed six billion and 2010 saw the world at seven billion people!

WHEN FOOD IS MORE PRECIOUS THAN GOLD

The precious metals exploited by the Spanish conquistadors have long been considered the most valuable treasures taken from the New World. There were 5.6 billion ounces of silver and 43 million ounces of gold exploited during the conquest. Using modern-day prices of gold and silver (with silver at \$24.08 USD per ounce and gold price at \$1200 USD per ounce), the total equals \$187,000,000,000 U.S. dollars. Calculating the financial value of one year's production of



major Maya cultivars equals a total of \$580,800,000,000 U.S. dollars. Therefore, the current worth of Maya cultivars per year is over three times the total value of all the precious metal taken from the New World!

The importance of Maya agronomic sciences has not been investigated and scholars have largely overlooked the impact that Maya cultivars have had on the history and the food security of the world.

The philosophy of the Classic Maya was based on the thesis: "Remember the future to anticipate the past". That philosophy is valid in the 21st century. When considering the earth's future, it is important to remember the Maya philosophy and recall that it's believed the Maya civilization collapsed when they over-stripped their land and became vulnerable to environmental change. Maya cultivars are still changing the world. ■

Maya Cultivars currently feed 60% of the world's population. Cassava alone feeds 500 million people daily!



Maize God residing in a well



Top: Guatemalan farmers weeding a field that is double-cropped with corn (maize) and tobacco simultaneously
Below: Spreading Casabe burrero (cassava bread) to dry, Venezuela







Mask Temple

The Mask Temple is the smallest of a triad of Maya lime structures at the archaeological site of Lamanai, Belize. Construction on the temples most likely began around 200 BC, but the masks were a much later addition, dating to c. 400 AD. The masks are adorned with the headdress of a crocodile, falling in line with Lamanai's namesake, which means "Submerged Crocodile." The Mask Temple is a tomb for what is believed to be a former ruler, as jade and shell jewelry were discovered with his remains. Not far away, another smaller tomb was discovered holding the remains of a woman, who was a contemporary of the man. No relation between the two has been discovered yet. ■

CHICHÉN ITZÁ'S SHADOWS



UNEXPECTED LIGHT SHED ON THE ANCIENT MAYA

|| BY GEORGE FERY



WHAT we see is not always what we expect, whether from nature or man-made. This is often true with archaeological remains of cities or human settlement, when new discoveries shed unexpected light on old finds, leaving question marks in their wake.

Chichén Itzá, the great Maya city in Mexico's Yucatán Peninsula, is a place we thought had been thoroughly explored and visited many times. But what about Chichén Itzá's shadows that are cast on the ancient citadel during the course of the year?

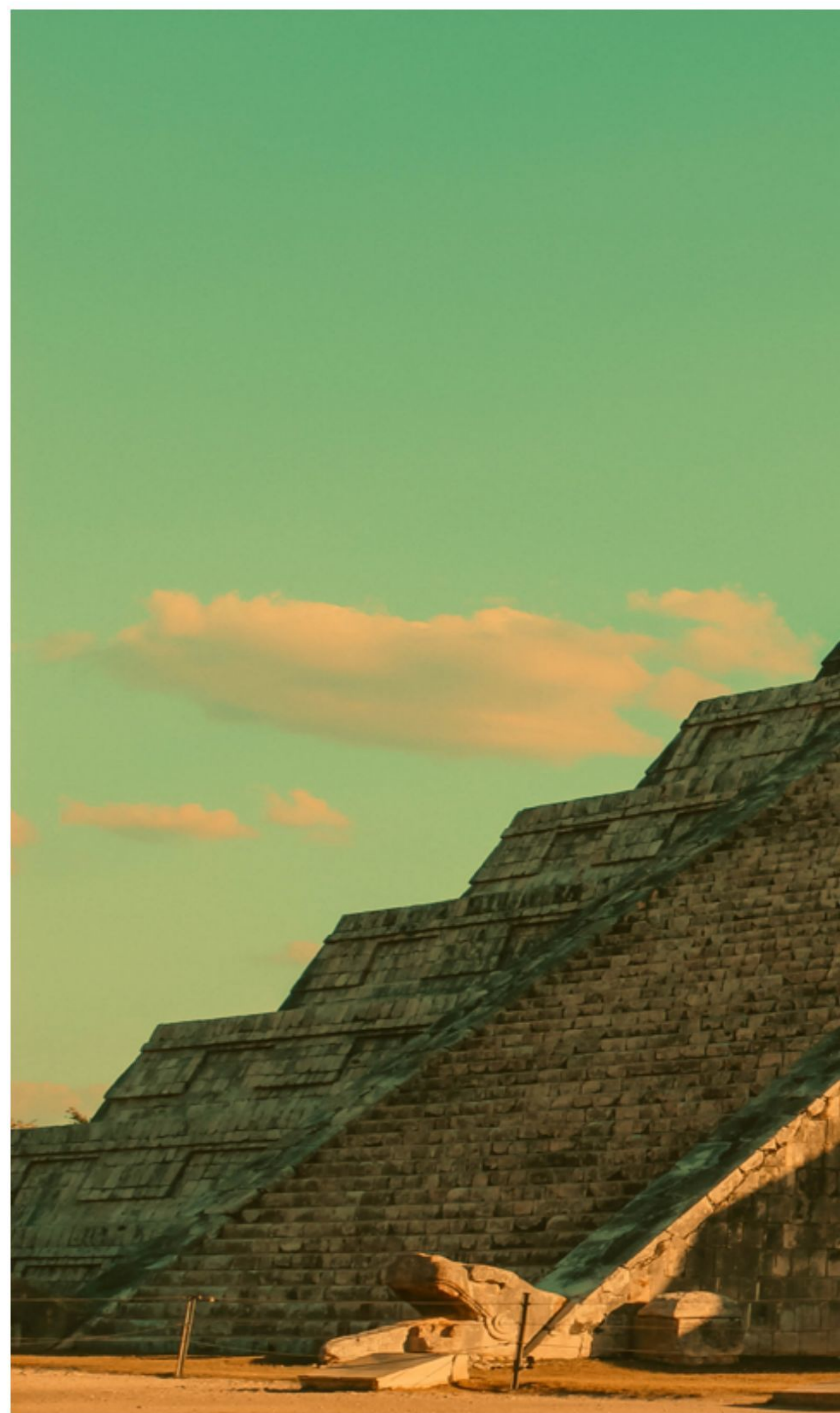
At the vernal and autumnal equinoxes, as it moves from east to west, sunlight plays with the angles of the northeast stairway of the Kukulkán pyramid, called *El Castillo* in Spanish. The course of the sun projects the shadows of the corners of the pyramid onto the vertical northeast face of the stairway balustrade, giving the visual impression that the body of an undulating serpent slowly crawls down toward its stone head at the bottom.

Thousands of tourists gather on the Grand Plaza to witness the event. They come to share in a communal spirit that transcends time and culture. In our times of extraordinary changes in science and technology, unimaginable only 50 years ago, people search for mythical answers to clear, or not so clear, contradictions in their swiftly moving world.

But that's only one of Chichén Itzá's shadows. There are many others attached to major and seemingly minor structures. The ancient city was planned as the center of the world, with Kukulkán at the intersection of direct lines between four important *cenotes* or sinkholes, ritually complementary to ceremonial caves, the other mythological 'shadows'.

CHICHÉN ITZÁ'S SHADOWS AND THE EQUINOX

For the ancient Maya, the Kukulkán pyramid was representative of the four-sided temple-mountain, or the fourfold partitioning of the world. The name of the deity is a Maya-Yucatec, translation from the name Quetzalcóatl in the nahuatl language, which translates as 'Quetzal feathered serpent',



the deity from Tula in central Mexico. The archaeological record shows that the feathered serpent ideology spread throughout Mesoamerica by the Late Maya Classic period (950 AD).

Kukulkán is believed to represent the Creation Mountain, with its Feathered Serpent's head and mouth agape at the base of both balustrades of the north stairway. The serpent symbol, in Maya iconography, appears profusely on numerous stone stelae, temple columns, and painted on ceramics. The shedding of the serpent's skin was perceived as the renewal of time and life through the enduring of nature's repeated cycles. This perception explains why the serpent symbol, attached to both life and death events, is so widespread throughout the ancient cultures of the Americas, and beyond.



The Temple Pyramid as the sun and shadow create a visual impression of a serpent slithering down the the stairs, with its stone head at the bottom.

Inset: Kukulcán, from the 16th-century Codex Borbonicus



The shedding
of the serpent's
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The temple-pyramid is not cardinally oriented, although mythologically it sits at the center of time and space. The pyramid's corners are lined up on a northeast-southwest axis toward the rising sun at the summer solstice, and its setting point at the winter solstice, making Kukulcán a monumental sundial for the solar year.

Each of the temple-pyramid's 52 panels contained in the nine terraced steps, equal the number of years in the Maya and Toltec agrarian calendars. The pyramid's nine levels are reminders of the nine steps to *Xibalba*, the underworld. Above all, Kukulcán is an instrument dedicated to the deities of nature and their role in the repeated night-day alternances, as well as that of life and death.

The main doorway of the outer temple at the top of the pyramid opens to the north. The four stairways ascending the pyramid, one on each side, have 91 steps each, equal to 364 steps that, with the temple at the top, total the 365 days of the solar year, the *haab'*, in Maya. The north stairway is the main sacred



path, and it is on its northeast balustrade that the sun casts the triangular shadows. Of note is the fact that in Maya culture, north equals the departure from the power of nature and anchors the sun in culture. It is a metaphor associated with the understanding of mankind's burden and commitment in the universe.

THE GREAT PLAZA, KUKULKÁN, AND THE PRIMORDIAL SEA

The Great Plaza that surrounds El Castillo on four sides, is part of the New Chichén (950 - 1500 AD), a portrayal of the Primordial Sea of Creation from which, according to Maya tradition, all life sprung at the beginning of time. The plaza's north side, on which Kukulcán

stands was also the area where major ceremonies took place; it is bordered by the Venus Platform, close to that of the Jaguars and Eagle Warriors.

Behind it is the massive skull rack, or *tzompantli* in Nahuatl; it is 164 feet long by 40 feet wide and may be the second largest in Mexico after those of the Templo Mayor in Tenochtitlán. On the skull rack was a scaffold-like construction of wood poles built over the stone structure, on which hundreds of skulls of war captives and sacrificed victims were displayed.

On the east side of the Great Plaza is the massive Temple of the Warriors, and the no less important Ball Court to the west.





Above: The Chichén Itzá Plaza, with the Temple of the Warriors
Below: Massive stone 'skull rack', or tzompantli

It is the largest in the Americas – 552 feet long by 300 feet wide, with walls that rise 20 feet. The Great Plaza was closed by a wall over 17 feet high in places, with a limited number of guarded entrances.

Among such places is the one leading to the sacred well, *sacbeh.1*, or 'white road'; there are over 34 *sacbehobs* in Chichén. Most buildings are oriented 17 degrees off true north; Kukulcán is 23 degrees off.

CHICHÉN ITZA'S SPIRITUAL GATEWAYS

Two other portals, or spiritual gateways, are linked to the temple-pyramid, one natural and the other man-made.



The first is the huge sacred cenote, or sinkhole, referred to as the 'Great Well of the Itza'. The well was not used for domestic purposes, but exclusively for rituals. The cenote was believed to be the place of communication with the gods of Xibalba, the 'Place of Awe' or underworld; home of the Maya pre-Classic god (2500 BC) of a thousand faces, the lord of rain, lightning, and thunder, Cha'ac.

The second gateway is the ballcourt where, according to the Maya- Kichè sacred book the *Popol Vuh* or Book of Counsel, men and deities of the underworld battle for supremacy, for one or the other team in the real world during ritual ballgames. According to Maya tradition, it is only when ritual games with the deities of the underworld were played simultaneously with a game in the world above that interaction between the two worlds, or field of opposites, was believed to take place. There was no interaction with the deities of the underworld during secular or common games.

The seasons and the metronomic passage of the sun and heavenly bodies were understood by the Maya as essential markers to alleviate anxieties of daily life by their repeated familiarity. Their transit through both day and night is enshrined in belief structures and ceremonies spanning thousands of generations. Like most cultures, the Maya believed that the sun did not set, but continued its course as the 'black sun' at night through the underworld, to gloriously rise again the following morning. Most ancient monuments are also associated with this spiritual view of the world, essential in carrying out secular and spiritual functions.

Xjunajpù/CC BY SA 3.0





Left: Mayan vase with the image of Ixquic with K'awiil and the Lords of Xibalba

Right: Mayapán-style incense burner in the form of the rain god, Cha'ak, 1100-1300 AD



The Popol Vuh

- The *Popol Vuh* is the corpus
- of mythological and historical
- narratives, including the creation
- story according to the Quiché-
- Maya people. It has been
- suggested that the *Popol Vuh* is
- a compilation of oral traditions
- and is believed to have only been
- written down some time in the
- middle of the 16th century. In
- the creation myth, there were
- two creator gods, Gucumatz and
- Tepeu. After creating the earth out
- of the primordial sea, they decided
- to populate it with animals, but the
- animals could not worship, invoke,
- or glorify them. So, the gods
- decided to create human beings,
- first with mud and then with
- wood, but these were failures.
- They did not possess hearts and
- minds and were destroyed by a
- flood. In a final attempt, the gods
- succeeded and created human
- beings out of maize. Until today,
- maize is still seen as a sacred and
- divine food and honored as such.
- The first four men prayed to their
- makers, but they had perfect
- vision and therefore perfect
- knowledge, which alarmed the
- gods. According to *Popol Vuh*, in
- the fourth and last experiment
- of creation, the gods put a fog on
- human eyes and made four wives
- for the four men, and from these
- couples sprung the leading Quiché
- lineages.





THE CENOTE OF SACRIFICE, THE FIRST GATEWAY

The Sacred Well is oval shaped and from its lip to the water, the drop is 72 feet and its depth is 65 feet; there is a bed of mud about 20 feet thick at the bottom.

In one of the rooms of the small structure built on the lip of the Sacred Well of Sacrifice was the *temazcal* or steam bath to purify sacrificial victims to Cha'ac, god of rain and thunder, and its deities. Gifts were of precious jade and gold, fine ceramics, and lives - as human remains found at its bottom testify. Of note is the absence of Toltec material in the cenote.

Each offering was made in accordance with the needs of the time and the demands of the gods. The archaeological record shows that human sacrifices were of both genders and of any age. In time of dire needs such as persistent drought, a community would sacrifice its best—not the sickly or the maimed. Sacrificed victims had to be able and in their prime and the younger the better, for Cha'ac would not accept anything less.

FUNDAMENTALS IN MAYA BELIEF STRUCTURE

The socio-economic organization of ancient Maya communities revolved around agriculture, grounded in two seasons at that latitude, which meant two harvests. Hence the Maya belief structure and religious organization adhered to their seasonal and daily partnership with nature. The gods and deities from their pantheon were those driving the fundamentals of nature: the sun, rain, and the vegetal world.

These fundamentals are enshrined in the *Popol Vuh*, that describes the creation of the universe by the gods who, after failing three times, succeeded in creating man out of maize dough. Above all, concurrently with the deities, ancestors were believed to participate at every stage of individual and family daily life. They were not, however, recipients in self-sacrifices—the exclusive realm of the gods and deities.



The serpent sculpted on monuments at Chichén Itzá and other ancient Mesoamerican and Mexican sites is a metaphor, not a representation of the animal in a zoological sense. It was perceived that the serpent body as it moves, is comparable to the swirls of smoke after a self-sacrifice by members



or no crop, and its consequences: famine, death, and the return of anguish and fear. The milpero's (farmer's) profound mystical relationship to corn's mythological substance, and not just its use for actual sustenance, still is a way of life entirely alien to non-traditional communities.



of the nobility or the priesthood. After bloodletting, the blood of a person would fall on bark paper that was then burned. The swirling smoke was believed to carry the prayers of the suppliant to ancestors and deities, seeking their guidance for living another day in a dangerous world.

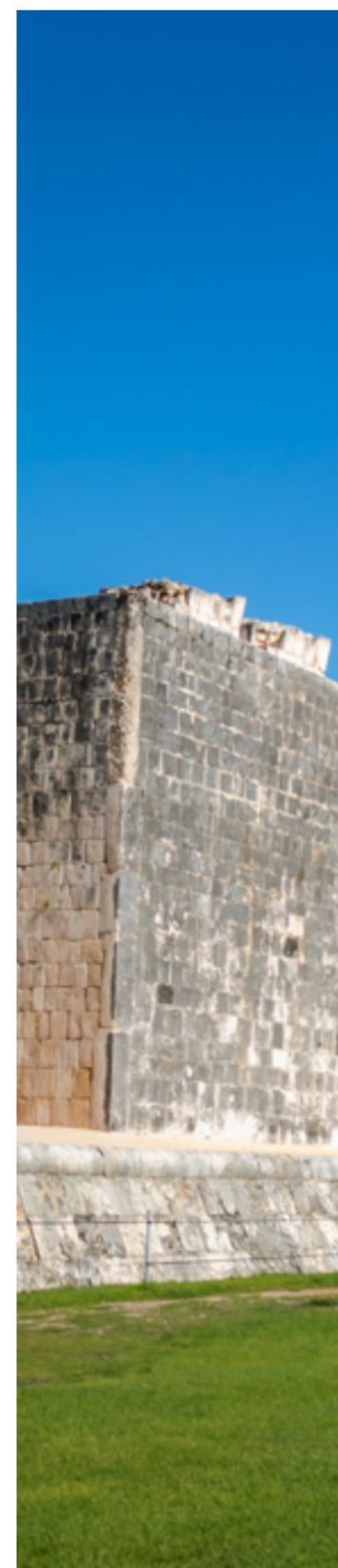
The swirling smoke, reminiscent of the serpent, was a reminder of a changing and unpredictable world. For ceremonies today, copal nodules known as pom in Maya- Kichè, are used instead of human blood. Copal, copalli in Nahuatl, is a resin obtained from the sap of tropical trees, believed to be the equivalent of the 'blood' of the plant-life world.

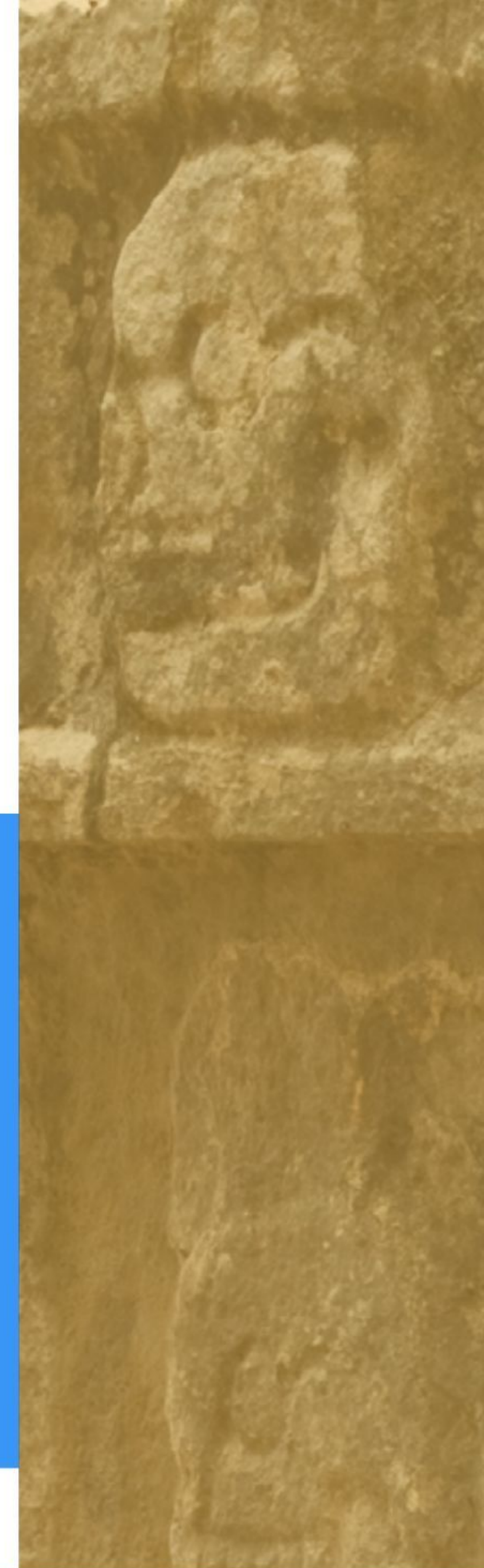
Planting and harvesting were central daily concerns of past communities, together with the weather; rain specifically because its delay or limited downpours could translate into a bad

THE GREAT BALL COURT, THE SECOND GATEWAY

The second portal or 'shadow' at Chichén Itzá is the man-made spiritual gateway, the Great Ball Court, located on the west side of the Great Plaza together with the Temple of the Jaguars. For the ancient Mayas, ball courts, under specific ritual games, were believed to open into the 'other world'. This 'opening' however, could only take place during a ritual fateful game destined to end in sacrifice.

The deities of Xibalba did not play unless a ritual contest took place above ground at the same time. It is only when the ritual games were concurrent in this world and the 'other' that the interplay between the participants in the two worlds was believed to materialize. The metaphor that took place on the ballcourt reflected the tribulations of life and death that define human struggle and tragedy.





According to the Maya-Kichè sacred book the Popol Vuh, men and deities of the underworld battle for supremacy, for one or the other team in the real world during ritual ballgames





The Red Jaguar Throne

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The concept of Kukulcán, or 'Feathered Serpent', dates to the Maya Late Classic period (600 – 900 AD). In Guatemala, the deity was called Guqumatx by the Maya- Kichè, but was perceived as an evil monstrous snake, the pet of the sun god, with the Maya- Lacandón. The ancient Maya name for the god of agriculture, wind, and storms was Cha'ac with roots in the pre-Classic (1500 BC).

Kukulcán also appears in the Post-Classic period (950 - 1500AD), as the Vision Serpent. The god came into the Yucatán in the early seventh century with the Toltecs that migrated from Tula. The archaeological record shows a long history with Teotihuacán and Tula, on the central plateau of Mexico, with roots going back to the Olmecs.

The Mexicans introduced human sacrifice on a scale unknown before by the Maya. Their military

expansion aimed at dominating the surrounding land and people, together with control of the important salt trade and sea lanes around the peninsula. Their main anchor on Isla Cerito, gave them and their allies command of the Yucatán coastal trade routes. Meanwhile, in the countryside, Maya gods and deities remained mostly unchanged, since the cult of Toltec deities centered in large towns and cities, while Cha'ac reigned supreme in the countryside.

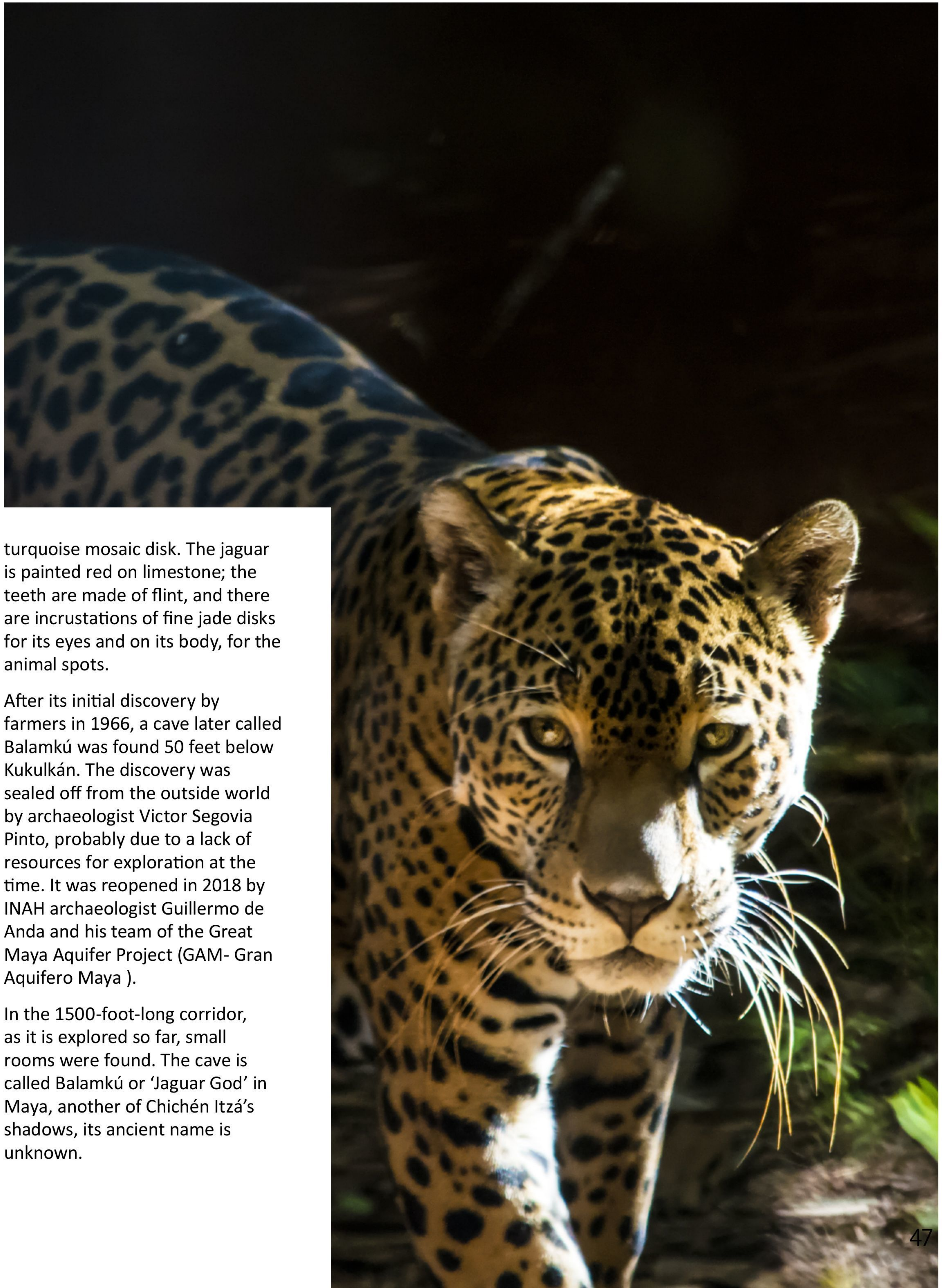
THE FIRST PYRAMID AND THE CENOTE WITHIN

Chichén Itzá today is not the city that was conceptualized by the Maya before the arrival of the Toltec-Itzá migrants. Long before, it was called *Uuc Yab'nal* (the city's name in Maya-Yucatec). In the mid-1950s investigations brought to light a smaller pyramid of nine terraced bodies within Kukulcán. Building a larger structure over

a smaller one was common practice in the Maya and other Mesoamerican cultures. The reason was that the first structure was believed to be saturated with ancestor power that could not be denied through willful destruction, under pain of failure of the new generation and its ultimate demise.

The single stairway of the buried temple faces northwest; it has 61 steps and a temple on top with two parallel galleries. There is a triple molding on its façade and a frieze showing a parade of jaguars, shields, and two intertwined serpents over the entrance. The architectural similarities between the two pyramids indicate that the one within may also be of Toltec origin.

In the antechamber of the inner temple, a red jaguar was found that may have served as a throne for the high priest. On the seat, there was an offering of a



turquoise mosaic disk. The jaguar is painted red on limestone; the teeth are made of flint, and there are incrustations of fine jade disks for its eyes and on its body, for the animal spots.

After its initial discovery by farmers in 1966, a cave later called Balamkú was found 50 feet below Kulkán. The discovery was sealed off from the outside world by archaeologist Victor Segovia Pinto, probably due to a lack of resources for exploration at the time. It was reopened in 2018 by INAH archaeologist Guillermo de Anda and his team of the Great Maya Aquifer Project (GAM- Gran Aquifero Maya).

In the 1500-foot-long corridor, as it is explored so far, small rooms were found. The cave is called Balamkú or 'Jaguar God' in Maya, another of Chichén Itzá's shadows, its ancient name is unknown.

The jaguar is a central mythological figure in Mesoamerican and other myths of the Americas because of the belief in the animal's ability to enter and leave the underworld at will.

So far, over 170-plus ceramic bi-conical censers were found in seven 'rooms' hollowed out from deep underground limestone. These are identified as those of the Toltec god, Tlaloc. The ceramics are dated from the Late Classic (700 – 800 AD) to the Terminal Classic (800 – 1000 AD) periods, similar in type and timeline to those found at Balamkanché. Maya ceramics were also found in deeper parts of Balamkú, that pre-date the Toltecs first arrival. This important discovery will no doubt help rewrite Chichén Itzá's history.

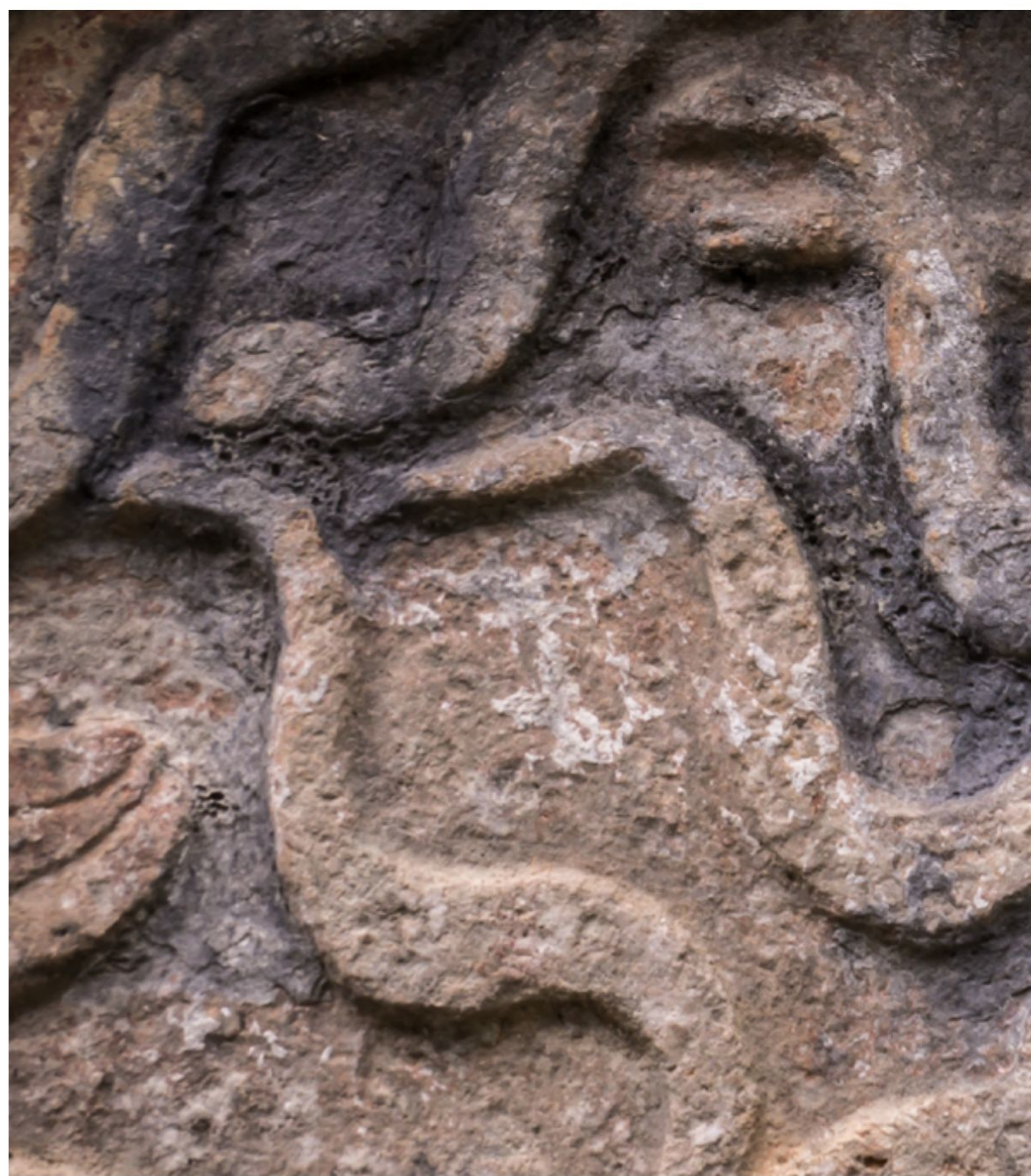
CHICHÉN YET TO BE DISCOVERED

Then, as today, traditions were comparable to those seen on more recent temple-pyramids, which symbolically show the same concern for life's daily predicaments and societies' dependence on agriculture. Was the serpent's shadow also seen on equinoxes on the now-hidden pyramid within Kukulcán? We do not think so. Chichén Itzá's shadow, as seen on the more recent structure, may not have been visible then, given its shorter size and the sun's angle striking the diminutive structure. It may, however, have been a marker for the spring and fall equinoxes, but not in the fashion we see today.

There is much more to be said about Chichén Itzá's shadows and the ancient city itself. There is still more to be unveiled, above and below ground, as work in the Balamkú's cave reminds us. Furthermore, excavation programs in the Great Plaza, which started in 2009, revealed buried structures that pre-date Kukulcán. By then we already knew about the pyramid within. Puzzling discoveries and wonders are certain to continue.

We will visit Chichén Itzá again of course, since this story is only a glimpse of the ancient city's complex history that has so much more to tell us. Understanding the 'whos,' 'whys,' and 'whens' of its great past will take a few more 'stories' and no doubt interpretations in the light of ongoing discoveries. ■

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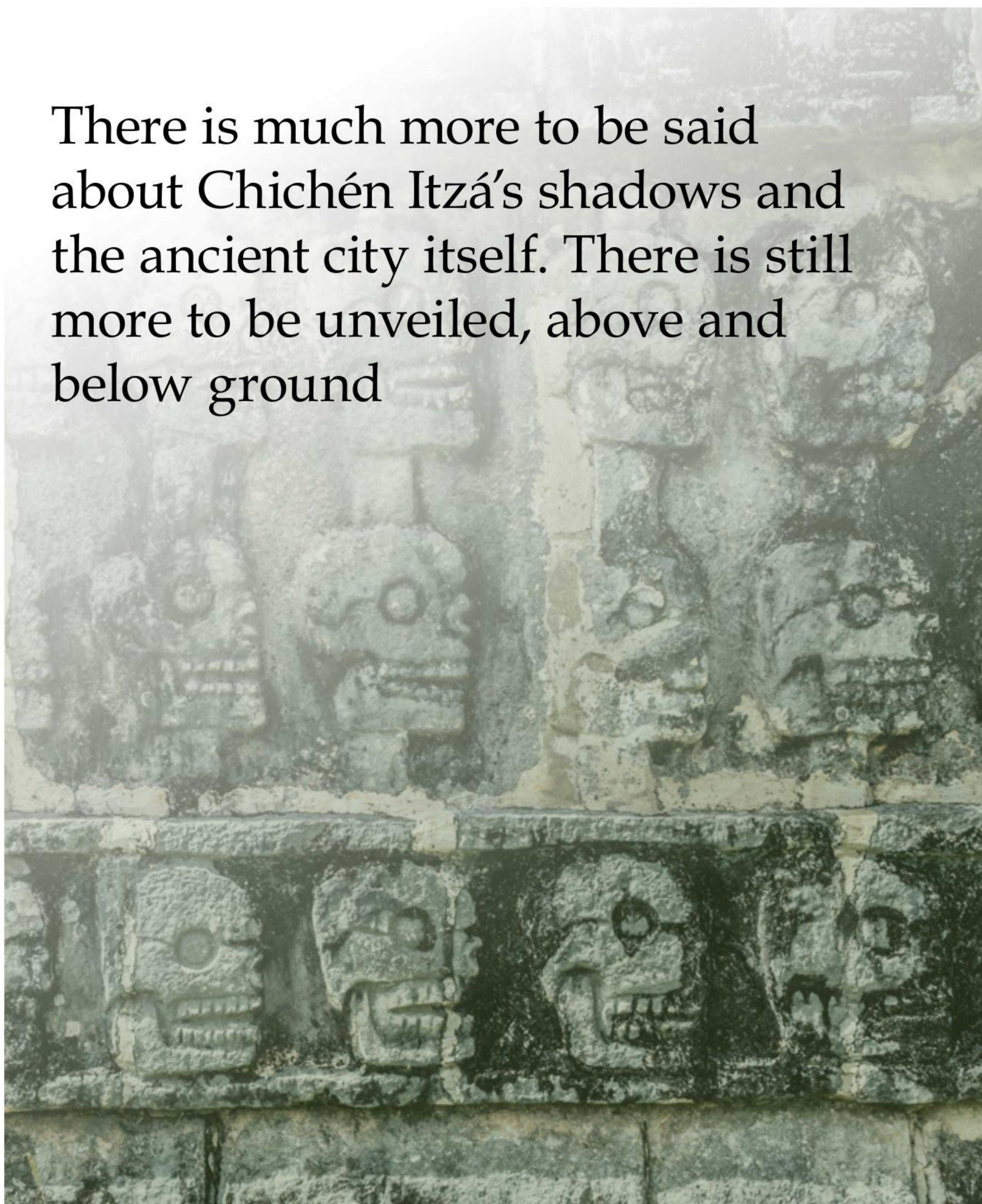




Excavations at the Plaza, circa 2009
| © Photo George Fery



There is much more to be said
about Chichén Itzá's shadows and
the ancient city itself. There is still
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below ground





THE ROYAL PATH TO THE AFTERLIFE

|| BY LIZ LEAFLOOR

PALLENQUE, originally known as Lakamha (literally 'Big Water'), was a powerful Maya city-state in southern Mexico dating from about 226 BC to 800 AD. It was also the home of K'inich Janaab' Pakal, 'Pakal the Great'.

K'inich Janaab' Pakal came to power at the age of 12 in the seventh century and lived until he was 80. During Pakal's youth, Palenque suffered many raids by the people of Kaan (or Calakmul), another strong Maya city. His mother, Ix Sak K'uk', ruled as Queen of Palenque until Pakal reached the age of maturity, at which time he became the king, or 'Ajaw', and she served as Regent.

Pakal's reign as king was prosperous, and he ruled for some 68 years—the longest known reign in Western Hemisphere history. He expanded Palenque's power in the western part of the Maya states and initiated a building program that produced some of the Maya civilization's finest art, architecture, bas-relief carvings, and sculpture that the Maya ever produced.

THE TEMPLE OF INSCRIPTIONS

The Temple of the Inscriptions in Palenque ranks among the most famous monuments of the Maya world and is the largest Mesoamerican stepped pyramid structure. Construction of this monument was commissioned by Pakal himself in the last decade of his life, and was completed by his son and successor K'inich Kan B'alam II a short time after 683 AD.

The site consists of a structure that sits atop an eight-stepped pyramid, for a total of nine levels. On top of the pyramid sits the temple which is comprised of two passageways divided by a series of pillars and covered by a vaulted roof. Both the temple and the pyramid had a thick layer of stucco on it and were painted red, as was common for many Maya buildings.

In 1948, Mexican archaeologist Alberto Ruz Lhuillier (sometimes called the "Hitchcock of Archaeology") was doing excavations at the temple when he uncovered a floor panel which hid a secret staircase choked with rubble. When the debris was finally cleared away, which took four long years, Ruz was able to squeeze into the revealed burial chamber deep inside the pyramid, which held the untouched tomb of King Pakal himself.

His skeletal remains were still lying in his coffin, wearing a spectacular jade funerary mask and bead necklaces. Pakal had been buried with several male and female human sacrifices, and grave goods including jade figures, pearls, shells, obsidian, and jewelry.







The tomb itself is remarkable for its large, elaborately carved sarcophagus, and stucco sculpture decorating the walls, which depict the ruler's transition to divinity and figures from Maya mythology.

THE KING'S SARCOPHAGUS

Pakal's sarcophagus was carved out of a single piece of stone. The much-discussed symbolism of the lid is commonly believed to depict Pakal in the guise of one of the Maize Gods emerging from the underworld with the Tree of Life pattern in the background, along with symbols of his rebirth, of planets, constellations, and many more.

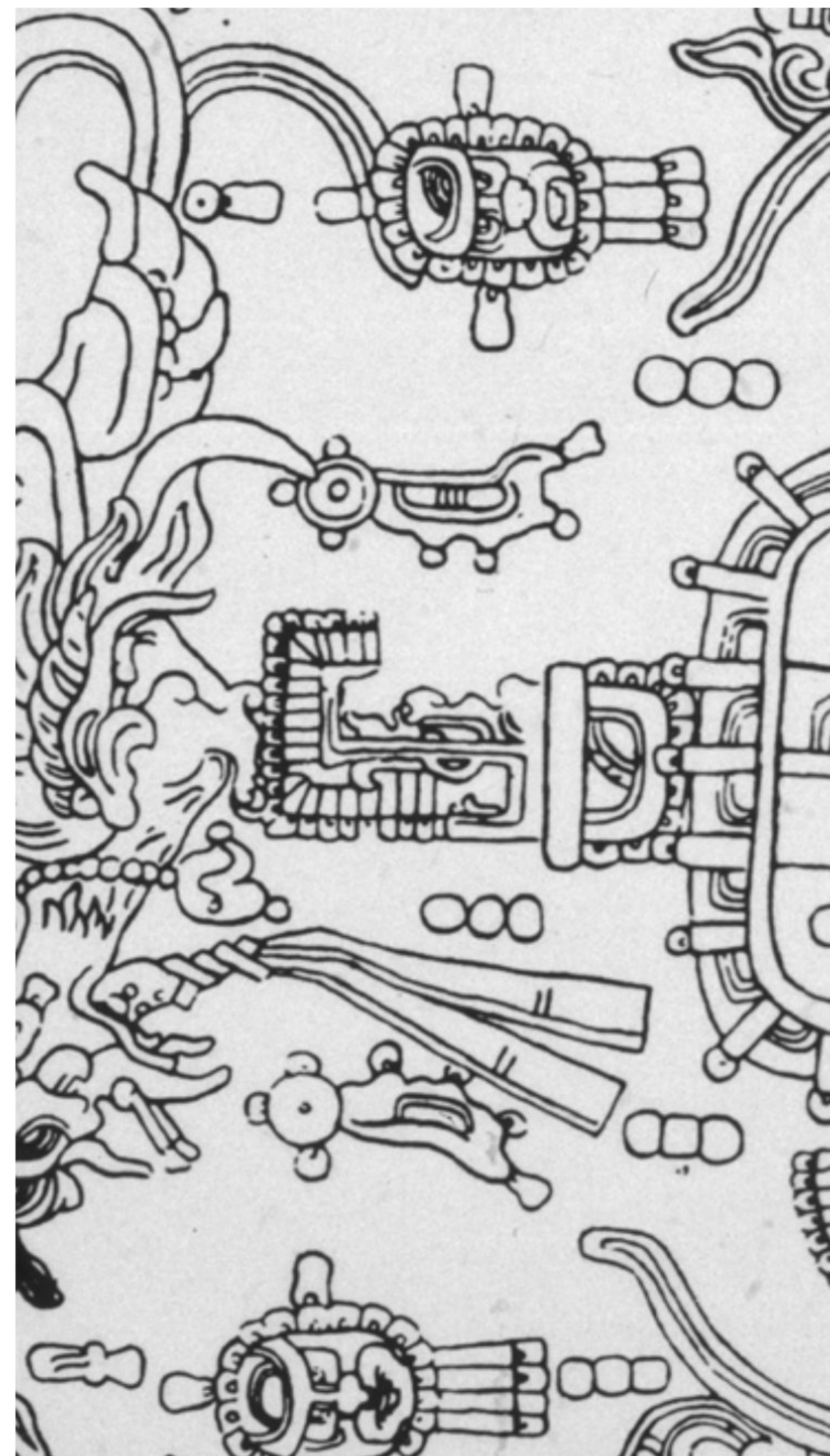
The engraving became the focus of attention of ancient astronaut enthusiasts after its appearance in Erich von Daniken's 1968 bestseller

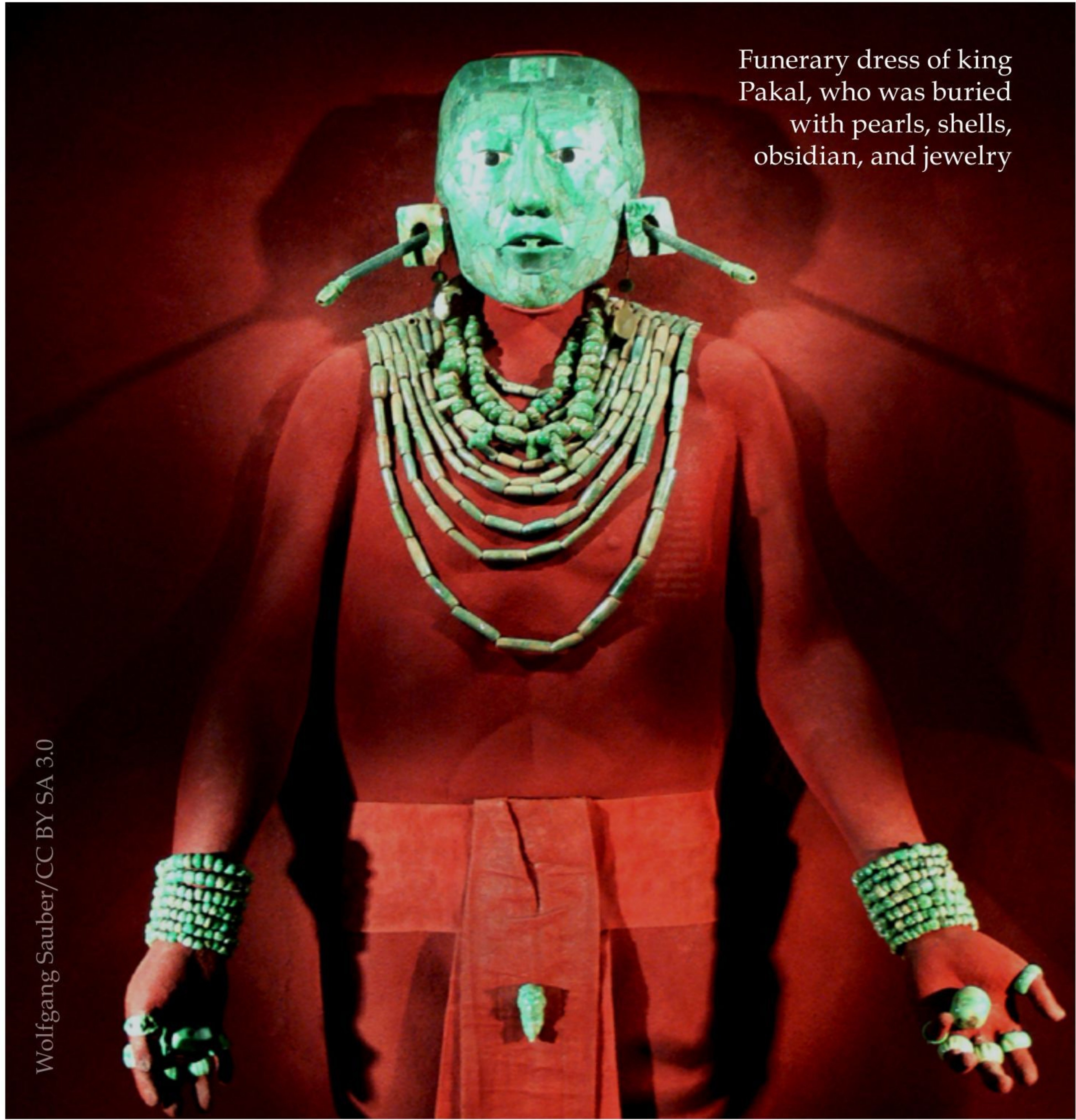
Chariots of the Gods. Daniken pointed out that if the lid is flipped horizontally, Pakal looks as though he is seated in what appears to be a spacecraft, complete with fuselage, controls, and a breathing apparatus!

This theory has, of course, attracted much criticism, though turning the image on its side, it is clear to see where this creative interpretation has come from.

A PATH TO THE AFTERLIFE

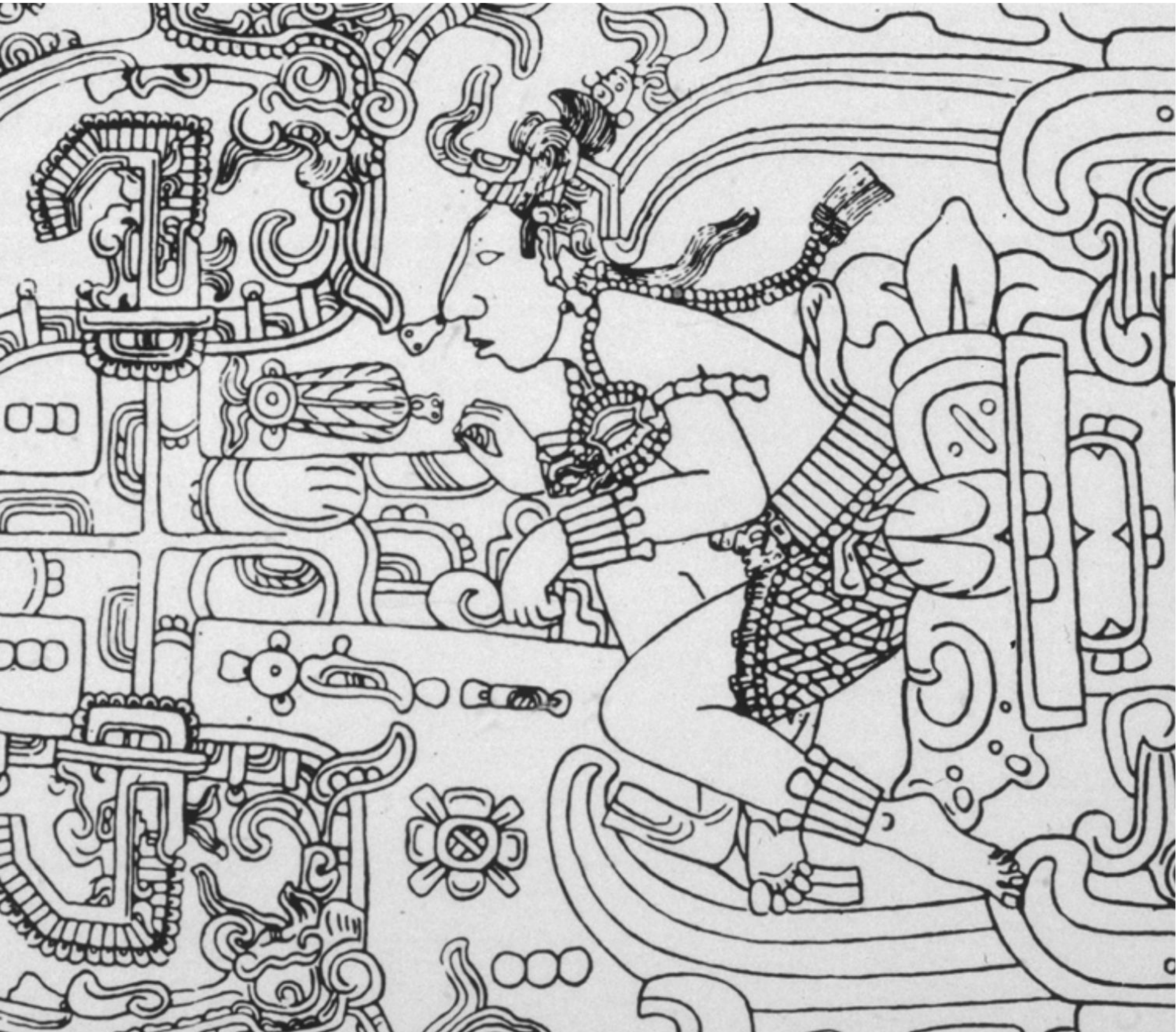
In 2016, archaeologists made another fascinating discovery under the Temple of Inscriptions – a water tunnel consisting of nine channels through which water circulates. The channel is fed by a spring and reveals complex hydraulic engineering.





Funerary dress of king Pakal, who was buried with pearls, shells, obsidian, and jewelry

Wolfgang Sauber/CC BY SA 3.0



Above: Detail drawing of the lid of the sarcophagus of Maya ruler Pakal the Great
Far right: Bas-relief featuring Pakal



Archaeologist Arnolando González Cruz, project manager at Palenque, believes the tomb and pyramid were intentionally built on top of the spring between 683 and 702 AD and that the tunnels were created to lead water under the funeral chamber and act as a symbolic path to guide Pakal's spirit to the underworld. Evidence comes from carvings on a pair of stone ear adornments, which say a god "will guide the dead toward the underworld, by submerging (them) into the water so they will be received there."

While the tomb of Pakal was largely hidden from view until 1952, archeologists believe that at some point it was made accessible to those who wished to worship the ruler after his death. ■

©Jebulon



Head of king Pakal as an adolescent



Funerary trousseau of the "Red Queen" of Palenque

THE MYSTERY OF THE *Red Queen*

|| BY LEONIDE MARTIN

An unexpected discovery of a royal burial inside a previously unknown substructure of Temple XIII in Palenque, set off a decades-long archaeological mystery. Temple XIII is a smaller pyramid structure adjoining the soaring Temple of the Inscriptions. Inside the burial chamber, archaeologists found many artifacts dating to 600 – 700 AD, including a spindle whorl used by women to weave, figurine whistles, and ceramic bowls. In the center of the chamber was a closed sarcophagus, covered with red cinnabar (Mercuric oxide).

When the monolithic limestone lid was removed from the sarcophagus, the researchers beheld a royal skeleton not seen for 14 centuries, lying on its back with bones completely permeated with red cinnabar. For the Maya, red symbolized sacred energies of blood, called *itz*, and was the color of the east, the rising sun, and the renewal of life.

It was a rich burial: a diadem of jade beads adorned the skull, hundreds of bright green fragments framed the cranium from a broken mask, and more jade, pearls, shells, obsidian blades, axes, and bone needles surrounded and covered the skeleton. It was the biggest discovery in Maya archaeology in forty years.

Mexican physical anthropologist Arturo Romano Pacheco examined the skeleton and determined it was a woman. The unknown royal woman was given the nickname, "The Red Queen."

But who was she? There was no information to identify the woman, although several clues pointed to a relationship with Pakal. Her burial pyramid was adjacent to his, and they both had a monolithic lidded sarcophagus, jade masks, diadems, and jewelry. Both their

skeletons were permeated with cinnabar, and they were buried during the same time period.

The two primary candidates were Sak K'uk, Pakal's mother, and Tz'aakb'u Ahau, Pakal's wife. Both women played important roles in his life, and he acknowledged them in portraits and glyphic histories.

Genetic research on the remains of The Red Queen was undertaken and in June 2012, the National Institute of Anthropology and History of Mexico released a statement which confirmed "that there was no relationship between The Red Queen and Pakal." Since Pakal and The Red Queen did not share common DNA, she could not be a blood relative. This eliminated his mother, Sak K'uk, as a candidate. Most Mayanists now accept that The Red Queen is Tz'aakb'u Ahau, Pakal's wife.

Tz'aakb'u Ahau came from a neighboring city to marry him in 626 AD. The Temple of the Inscriptions' West Tablet records her marriage and death dates, and she is depicted in carvings on two other tablets. Tz'aakb'u Ahau died in 672 AD, 11 years before Pakal's death. Pakal could have personally overseen her royal burial and the construction of her pyramid adjacent to his own.

But the mystery is not definitively solved. There is some chance that the skeleton may be that of his daughter-in-law K'inuuw Mat, or another unrelated royal woman as yet undiscovered. Archaeologists hope that a future excavation will discover the tomb of one of Pakal's sons. Specialists would then study the son's DNA and compare it with that of The Red Queen. If they shared common DNA, this would confirm that she was indeed Pakal's wife. ■

Sacrificial Waters

Close to the Maya ruins of Chichén Itzá in Yucatán, Mexico, enclosed by rock formations, the pool of Cenote Ik Kil presents an inviting scene of tranquility but beneath the serene surface of the water, archaeologists and speleologists found human bones and jewels as evidence of human sacrifice to the rain god Chaac. A stairway carved into the rock leads to the pool, which is 85 feet below ground level. It is 200 feet in diameter and 157 feet deep. The Ik Kil cenote is part of the archaeological park and open to the public for swimming—if one doesn't fear the rain god's ire. ■





Snippets

OF MAYA CULTURE



Fashion

Weaving colorful cotton fabric was an art form among high ranking ancient Maya women. The Maya cultivated cotton and used natural dyes from plant, animal, and mineral sources. They used spinning whorls to create thread that was dyed vibrant red, yellow, green, and blue. Maya women wore shift dresses, called *ypil* (huipil), that hung to mid-calf. The *ypil* often left arms and shoulders bare, and were anchored with borders above the breasts. Women wore belts decorated with shells, metallic discs, seeds, and pods. Jewelry was worn abundantly, including large pendants, heavy necklaces, wrist and ankle cuffs, and huge earrings made of jade, jadeite, amber, quartz, alabaster, seashells and pearls. No costume was complete without an elaborate headdress with waving feathers and jewels, such as the snake headdress.

Snakes are a powerful symbol among the Maya. In their primal form, snakes represent the surge of life force that brings all things on earth into manifestation. One who has mastered snake energy controls forces of creation and destruction and understands the secrets of existence. The coiled snake headdress is a significant artifact connected with Maya women. Images of ancient Maya women wearing this distinctive headdress have been found carved on stone monuments, painted on ceramics and murals, and drawn in screen-fold bark paper books called codices. Similar headdresses are worn today by Maya women who practice healing and midwifery in the tradition of the goddess Ix Chel. Every village has its *curendera*, a medicine woman, who uses plant-based remedies for a wide variety of conditions, ranging from respiratory and intestinal ailments to spiritually-caused illnesses such as *mal ojo* or evil eye.



Maurice Marcellin/CC BY SA 3.0

Above: Huipil attributed to Malintzin or Malinche people
Below: Ix Chel Statue of Jaguar Goddess



Dancing

Dancing, for the Maya, was more than just a way to pass the time. The Maya danced to communicate with their gods. By leaping and moving, they believed that they could bring themselves into a trance-like state that would bring them into another, more spiritual world.

The Maya would dance in masks and costumes, dressing themselves up as birds, jaguars, or strange monsters. Their dances, they believed, had the power to transform them into these creatures, which they called their *wayibs* or “spirit companions”. A massive five-pound jade pendant that once hung off of the belt of a Maya elite while he danced was discovered at K'anwitznal.

On the sites of Maya ritual dances, archaeologists have found countless bloodletting tools. The Maya, they believe, would often cut themselves with sharp spines, bones, and blades to release their blood before dancing, helping them bring on those transcendental experiences through sheer exhaustion.



8th-century painted mural showing Maya musicians and dancers

Education

The Maya developed a math system still taught successfully today. The Maya invented a numeral system as an instrument for measuring time - and not to do mathematical calculations. Therefore, the Maya numbers had more to do with days, months, and years, as well as the way they organized their calendar. This difference in focus shows in the Maya numeral system as there are only three symbols used to represent numbers, although their forms could vary according to the application: the dot, the line, and zero, which mimics the shape of a shell. The use of zero by the Maya civilization is the first documented use in the Americas.



Religion

The Maya were a polytheistic people who believed in a multitude of gods and goddesses. The deities of the Maya pantheon governed every aspect of nature and human life and were quite complex characters. Maya gods and goddesses were dualistic in nature and were changeable. The Maya civilization was a patchwork of loosely confederated political entities, so each Maya community was free to interpret their religion in the way that best suited them. As a consequence, the names and even nature of the Maya deities changed according to space and time.

There were hundreds of Maya gods, but Cha'ak was the god of lightning and rain and was closely associated with the fertility of the land - making him a very important deity. Ahau Kin or Kinich Ahau, the sun god, was significant as a deity - as shown in the use of his name



as a royal title indicating the divine status of the king. Regarding goddesses, while Ix Chel is associated with such aspects as childbirth, pregnancy, and fertility, Chac Chel ruled over death and destruction. It is entirely plausible that the two goddesses were in fact two opposite aspects of a single deity.

Goddess Ixchel
with rabbit,
Classic Period



Health and Wellbeing

For the Maya, health was all about balance. Man was considered as an integral and interactive part of the cosmos and society, and any imbalance would lead to illness. To cure these imbalances, the Maya used a holistic approach to healing that focused on both the spiritual and physical aspects of wellbeing and recognized their interconnection.

Chia (meaning strength) seeds were prized more than gold due to their incredible health-enhancing properties. Chia was regarded as a superfood, high in protein and fiber, and packed full of omega-3 fatty acids. Warriors used chia as their main source of fuel during conquests. Medicinally, they also used it to relieve joint pain and to stimulate saliva. Another superfood that the Maya were consuming more than 2,600 years ago is chocolate. Cacao is packed with flavanols, an antioxidant shown to benefit heart and brain

health, and this food is high in magnesium, calcium, iron, copper, zinc, and potassium. The Maya believed the cacao bean had magical or even divine properties, suitable for use in the most sacred rituals of birth, marriage, and death.

The Maya used sweat baths, or *temezcal*, which were achieved through saunas constructed out of stone. Water was poured over hot rocks to produce steam, thus encouraging the patient to sweat out his or her impurities. Sweat baths were seen as particularly useful for women who were pregnant. Herb baths were used to cleanse the body of a particular malady. The herbs were mashed and salt was added to help release the oils. When using dried herbs, hot water was poured over them to make the plant release its vibrational field.

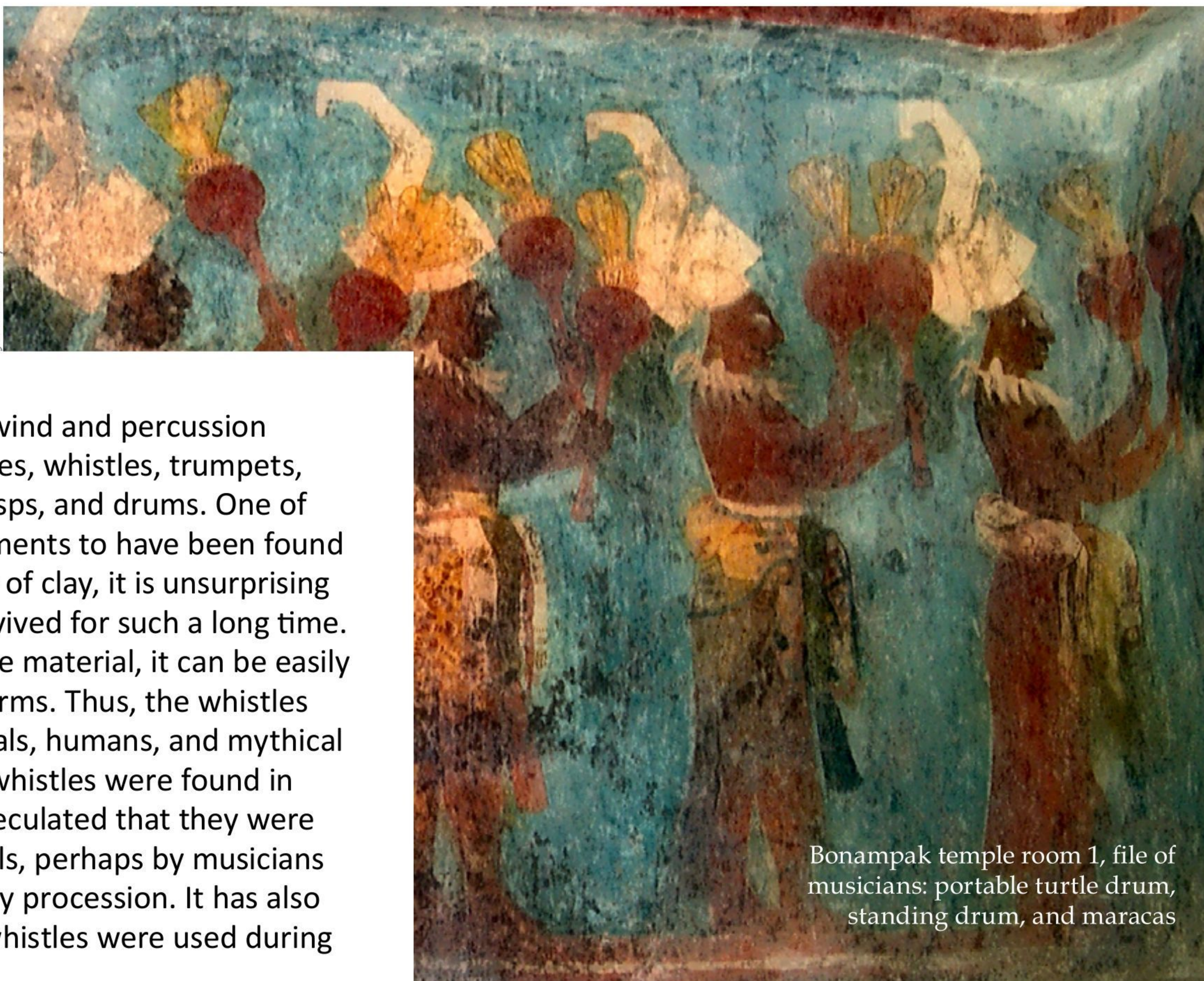
A *temezcal*, or low-heat sweat lodge was part of a curative ceremony thought to purify the body. Pictogram of an Aztec *temazcal* in the Codex Magliabechiano



Music

Jacob Rus/CC BY SA 2.0

The Maya had numerous wind and percussion instruments, including flutes, whistles, trumpets, rattles, bone and gourd rasps, and drums. One of the most intriguing instruments to have been found is the Maya whistle. Made of clay, it is unsurprising that the whistles have survived for such a long time. As clay is a highly malleable material, it can be easily shaped into a variety of forms. Thus, the whistles could be shaped like animals, humans, and mythical beings. As some of these whistles were found in burial sites, it has been speculated that they were used during funerary rituals, perhaps by musicians accompanying the funerary procession. It has also been suggested that the whistles were used during human sacrifices.



Bonampak temple room 1, file of musicians: portable turtle drum, standing drum, and maracas

Animals

To the Maya, animal domestication was not only a question of food. Remains of a variety of species, including small dogs, large cats, and some turkeys, suggest they domesticated animals as symbols of social and political strength, traded them, and also used them in ceremonies. Jaguars, pumas, wolves, and eagles were found buried in the Moon and Sun Pyramids at Teotihuacán. Dogs may have been exchanged in trade or gifted as pets to people who traveled on an obsidian trade route between Ceibal and the highlands. ■



Iguana Ceramic Whistle. Jaina, Late Classic 600-800 AD

Bernard Dupont/CC BY SA 2.0



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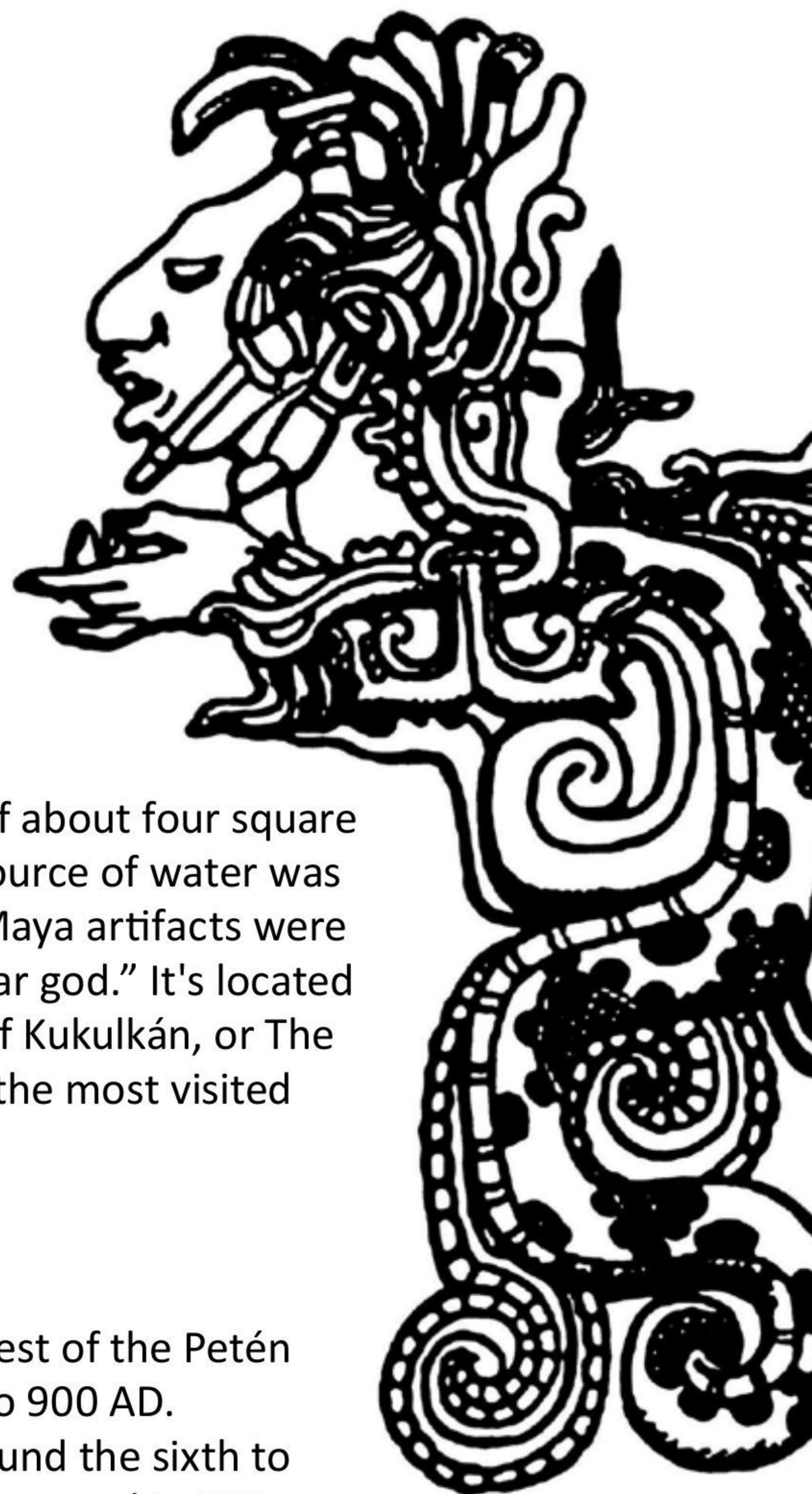
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5

10 Remarkable Cities of The Maya Empire

By Micki Pistorius



1 Chichén Itzá

Chichén Itzá was one of the largest Maya cities, occupying an area of about four square miles in the south-central Yucatán state of Mexico. The city's only source of water was from wells (cenotes) formed by sinkholes in limestone formations. Maya artifacts were discovered in a cave system known as Balamk'ú or "cave of the jaguar god." It's located less than two miles from the famed pyramid known as the Temple of Kukulcán, or The Castle, which sits centrally in the ancient city. Chichén Itzá is one of the most visited archaeological sites in Mexico.

2 Calakmul

Calakmul is an ancient Maya city situated deep in the Campeche forest of the Petén Basin of Mexico's Yucatán Peninsula. It was occupied from 600 BC to 900 AD. Although covered by jungle when it was discovered, in its zenith around the sixth to ninth century, it dominated the region and rivaled Tikal, which it conquered in 562 AD—only to be defeated again in 695 AD. By the eighth century, the city fell into ruin, until it was accidentally rediscovered in 1931 by a botanist.

3 Copán

Copán is located near the border of present-day Guatemala. It is considered to be the most artistic of the Maya cities and is famous for its carved stone sculptures that decorated plazas and temples, as well as an impressive staircase with the entire history of Copán written on it in Mayan hieroglyphs. From the early 400s to 820 AD, a series of 16 kings ruled Copán, all of them belonging to a single dynasty. During the eighth century, the 13th king of Copán lost a battle against a neighboring kingdom and was beheaded.

4 Palenque

The Spanish named it Santo Domingo de Palenque, but it was called Lakamha' in the Maya-Yucatec language and was once the ancient capital of the B'aakal Kingdom located in Sierra Chapaneca, Chiapas, southern Mexico. The ancient name Lakamha' translates as "place of big waters" for its numerous streams and rivers that fall through ravines and over great natural stair-steps. During the seventh century it was ruled by one of the greatest mid-Classic lords in Maya history, K'inich' Janahab' Pakal, who had a 68-year reign.

5 Tikal

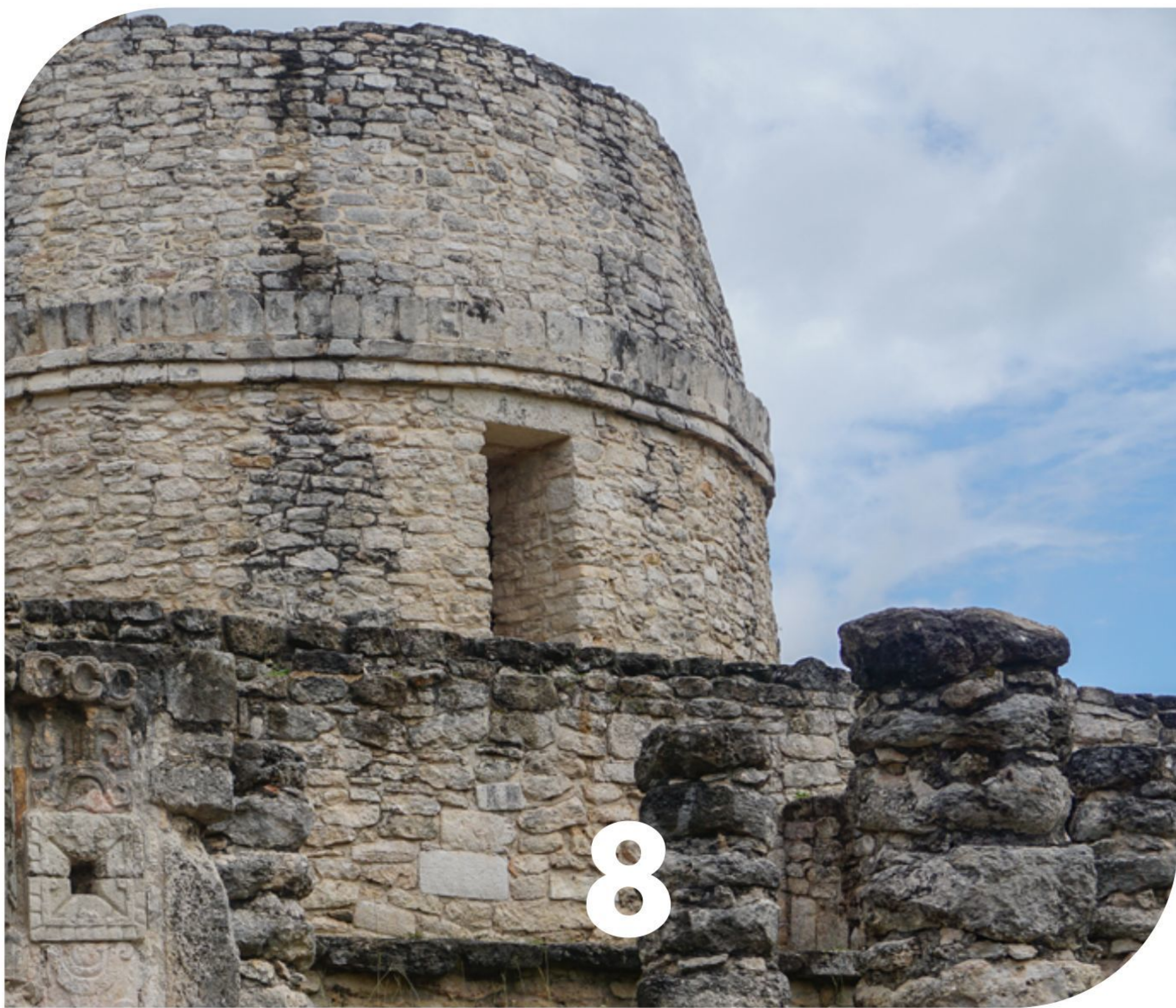
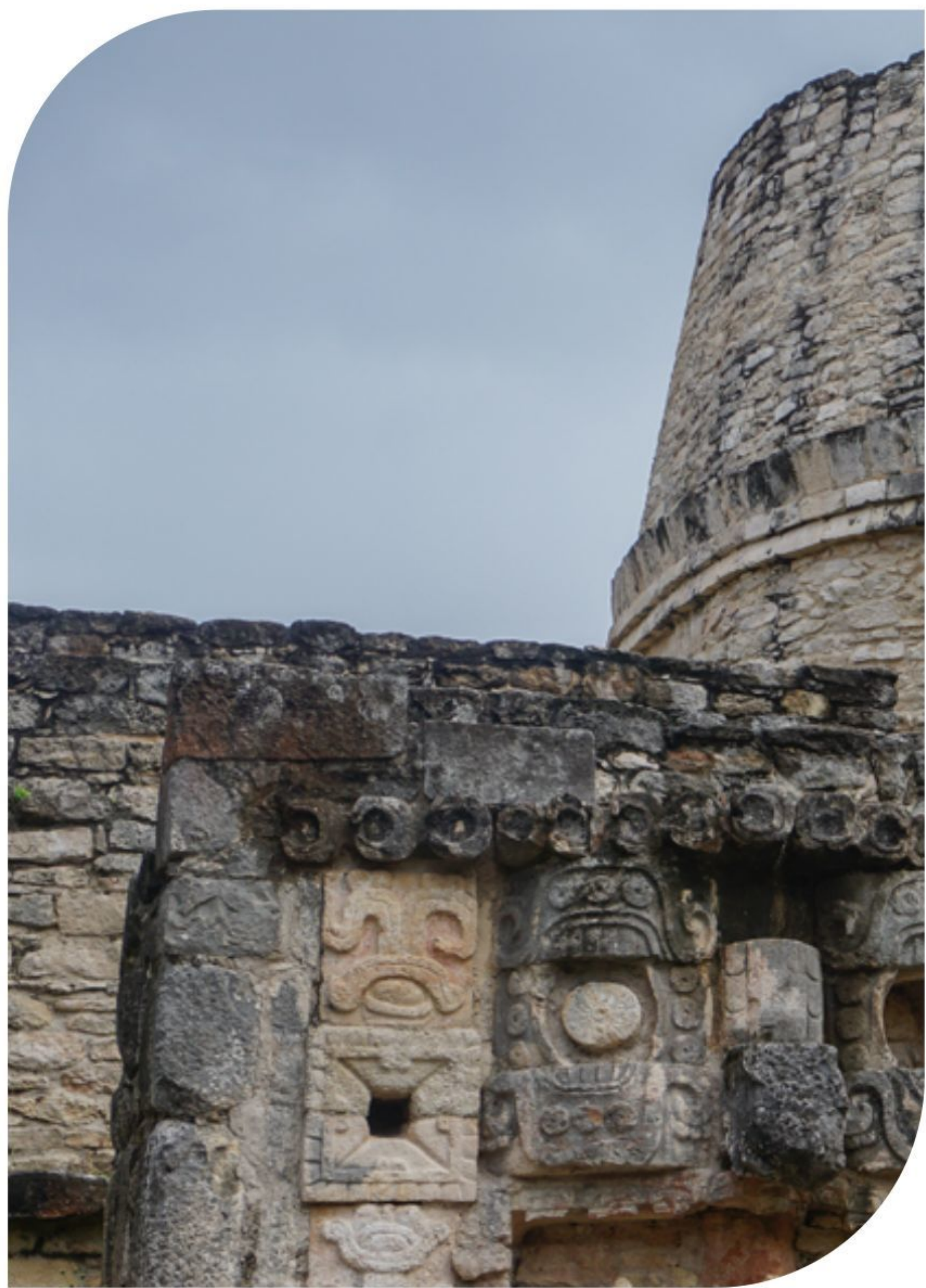
At its peak during the Classic period (200 to 850 AD), Tikal had 100,000 to 200,000 residents. Located in present-day northern Guatemala, it was the largest Maya city of the Classic period. Extending over 400 hectares and consisting of monumental architecture including palaces and temples decorated with incredible mural paintings, ball-game courts, and ceremonial platforms, it incorporated highly sophisticated technological, intellectual, and artistic achievements.



6



7



8



9



10

6

Uxmal

Uxmal is located in the Puuc region of the Yucatán Peninsula, Mexico. Legend says that the first king of the city was bested by a magical dwarf, named Itzamna, who won the position as king by building the tallest monument (now known as the Pyramid of the Magician) in the city in one night. Uxmal was laid out with a focus on astronomy and adjusted to the hilly terrain. The buildings are split in two horizontally, with the lower part plain and the upper richly decorated as a mosaic.

7

Tazumal

Tazumal is located near the ancient Maya city of Chalchuapa in El Salvador and dates from the pre-Classical period. Built as a ceremonial and religious site, it had an urban settlement with chiefs and shamans. The site is known in the local indigenous language as “the place where the victims were burned”, perhaps indicating that human sacrifice was practiced by the Maya at the complex. The two unexcavated mounds at the site are thought to have been ball courts where ritual games were played, with the losers often being sacrificed.

8

Mayapán

Mayapán is located in Yucatán, Mexico about 34 miles to the southeast of Mérida. According to local legend, Mayapán was founded by Kulkán, the Maya snake deity. Kulkán was also the name of a mortal ruler. Established around 1000 AD, it was in an alliance, known as the League of Mayapán, with the powerful cities of Uxmal and Chichén Itzá. It served as the capital of the Cocom dynasty and dominated the northern part of the Yucatán Peninsula from the 13th to the 15th centuries AD.

9

Xunantunich

Xunantunich is situated in Belize and the name is a Yucatec Maya word, meaning ‘Stone Woman’. According to local folklore, a man saw a beautiful Maya woman standing on a mound. He fled, and upon his return where she had appeared, they found the mouth of the cave which extended under the complex of Xunantunich. Several remarkably preserved friezes on the main temple represent Maya deities. The Tree of Life and astronomical symbols adorn the walls.

10

Tulum

Rising above the Caribbean waters, Tulum is located 80 miles south of Cancún in Mexico and is the last city inhabited and built by the Maya. It is thought to have been a religious center for priests that remained active during the Spanish invasion. Captain Juan de Grijalva and his crew sailed past Tulum and were astonished at the walled city with brightly painted temples of red, white, and blue. It became the site of the first meeting between the two cultures. ■





Balankanché Cave

Maya Gateway to the
Watery World Below

|| By George Fery



Caves

and sources of water are central to the cosmologies of many world cultures, used by humans from the dawn of time.

They are associated with powerful natural forces and are believed to be dwelling places for benevolent and malevolent

deities, protectors, and disruptors of communities and individuals' lives. An example of this is the Balankanché, located 2.5 miles southwest of the ancient metropolis of Chichén Itzá in Mexico's Yucatán Peninsula.

The cave's proximity to this major pre-Columbian site underlines the fact that Balankanché was an integral part of the theocratic city for religious rituals and ceremonies.

The conquest of the Yucatán peninsula by the Maya—Chontales or Putunes—took place in 918 AD; they were the people that already controlled the trade routes around the peninsula. They occupied the island of Cozumel, and from there, they crossed over to the peninsula and reached Yaxuná and invaded Chichén Itzá.

A second group of migrant-soldier invaders, together with the Toltecs, reached Chichén Itzá around 987 AD, introducing the cult to Quetzalcóatl from Tula, in the present-day state of Hidalgo, in central Mexico. They established a military dynasty that ruled the northern peninsula.

THE SACRED WELL

All cenotes, or natural open wells, were at times used for religious ceremonies. The large Sacred Cenote, also known as the Well of the Itzaes or Well of Sacrifice,

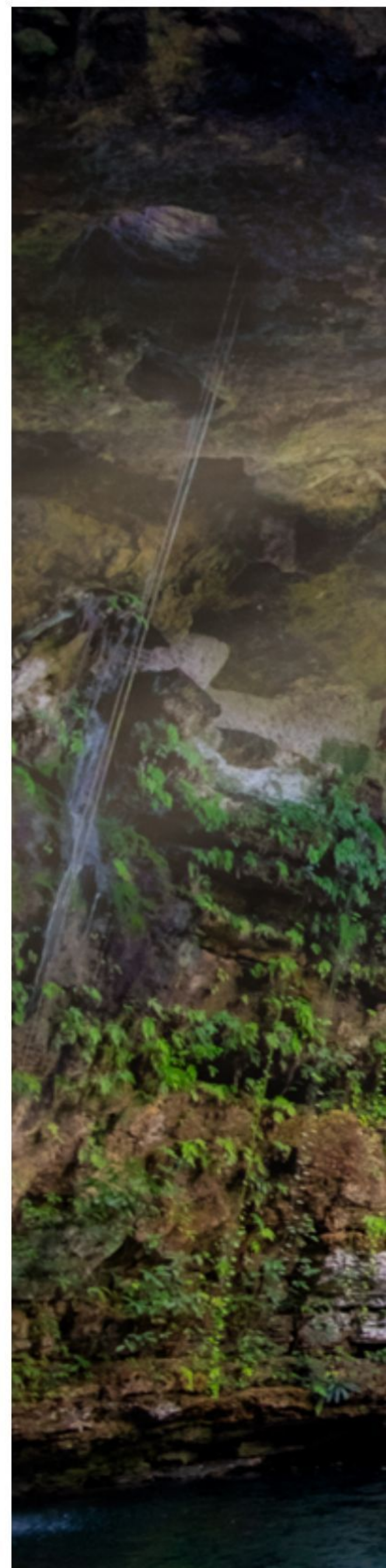
The cenote was believed to be the gateway to the underworld and Cha'ac's home, the rain deity

is located at the end of a 600-foot *sacbe* or 'white road', that links the Great Plaza and the Kukulcán pyramid with the Sacred Well.

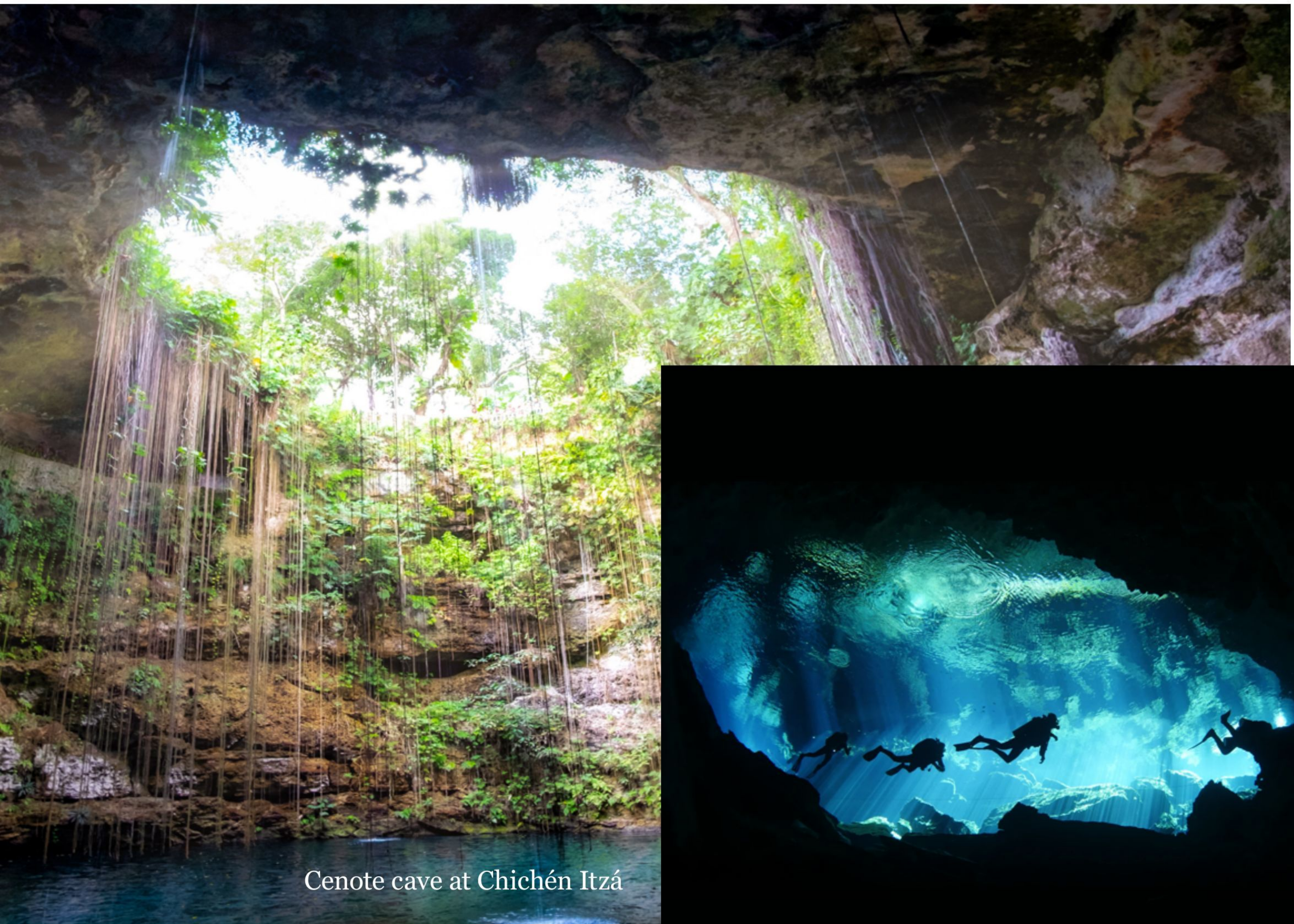
The cenote was believed to be the gateway to the underworld and Cha'ac's home, the rain deity from pre-Toltec times. The Sacred Cenote was strictly dedicated to religious rituals and ceremonies, that at times, involved human sacrifice, as remains found at its bottom testify. The second cenote, the Xtoloc (Iguana) in the city, among others in the vicinity, supplied water to the community.

THE TENANTS OF BALANKANCHÉ

Among the known caves in the Maya lowlands, Balankanché has received less attention than it deserves. Its importance was first noted in 1958 by José Humberto Gómez whose pastime for over 10 years had been the exploration of the cave. Entering the chambers in 1959, researchers found a large number of ceremonial ceramics, beyond two crude stone walls, set 99 feet and 361 feet respectively from the entrance.



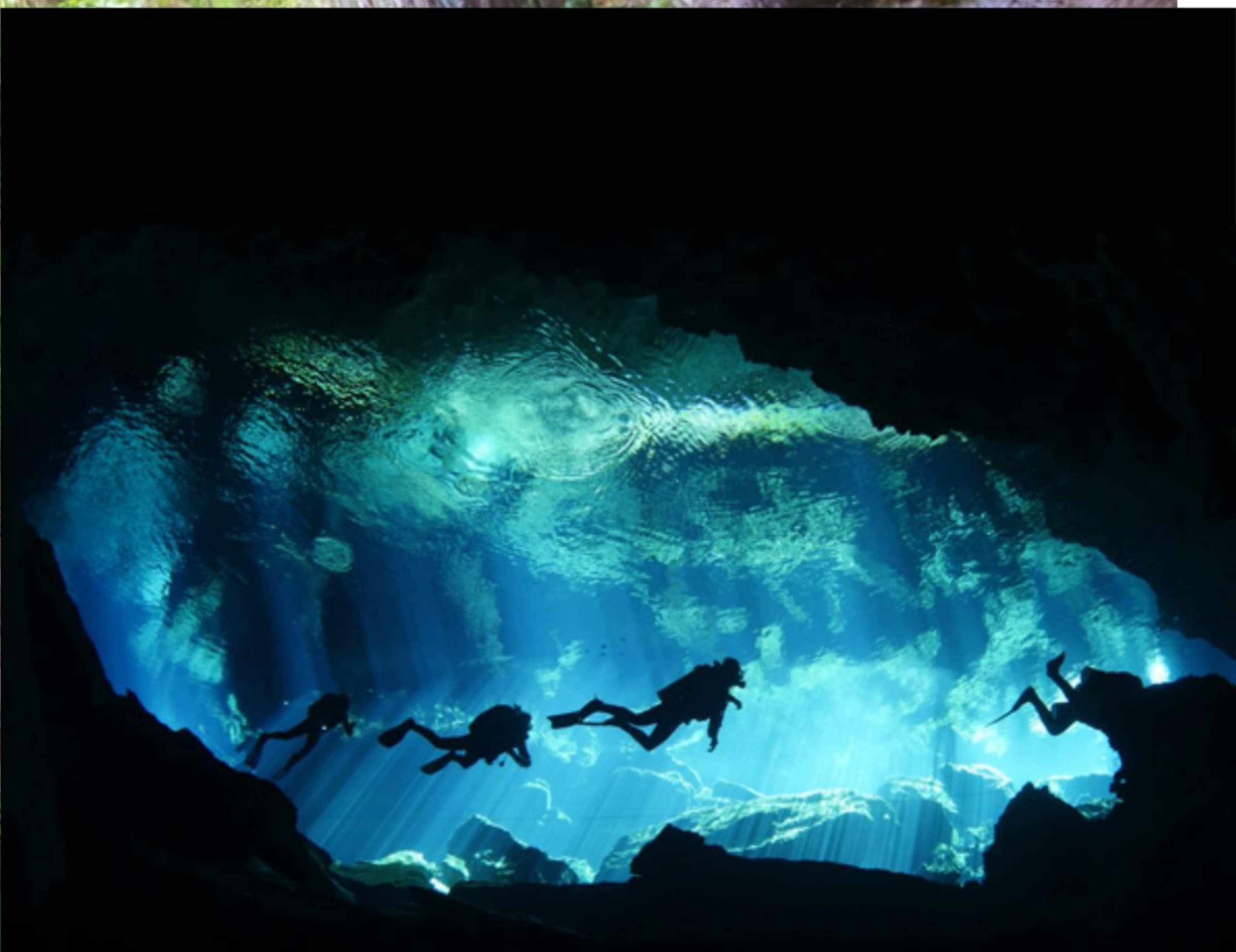
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Cenote cave at Chichén Itzá



Balankanché Caves



The Yucatán Peninsula has no natural above-ground rivers and few lakes. It does, however, have a massive network of subterranean caves connected by underground streams and rivers. Many of these caverns are believed to have been formed by meteor strikes associated with the massive meteor that contributed to the extinction of the dinosaurs during the Cretaceous–Paleogene extinction event. Much of the Peninsula is made up of limestone, which over time erodes and causes the ground to collapse into the water-filled cave below. These are sinkholes or cenotes and it is this source of groundwater that enabled the people of the Yucatán to flourish into the great Maya civilization.



Dennis Jarvis/CC BY SA 2.0

Above:
"Assemblage
of brightly
painted clay
vessels and
metates (stones
for grinding
maize),
and other
objects still
lying where
the priests
left them."
| Photo ©
Dennis Jarvis

In the corridors and side chambers, carved limestone effigy censers (perfume burners) were found, placed into cavities in the cave's complex stalagmitic formation, as well as simply laid on the floor. They were among many similar artifacts found in the cave.

Archaeologists believe that Balankanché's first 'tenant' was probably Cha'ac, the Maya deity associated with agriculture and rain. Its attributes are akin to Tlaloc, known as the Lord of the Third Sun in Toltec mythology, whose roots go back to the ancient city Teotihuacán and, farther in time, to Olmec cosmology.

The second invasion from central Mexico (987 AD), explains the presence of Tlaloc ceramics and Xipe Totec, the enigmatic life-death-rebirth deity carved limestone censers at Balankanché. The total eradication of Cha'ac representations underlines the proscription of the old god by the new one. The Toltec invaders

settled in power centers and towns, while traditional Maya- Yucatec's Cha'ac and other deities remained unchanged in the countryside, as they are to this day.

Balankanché's second 'tenant' was Tlaloc, the Toltec goggle-eye deity of rain, storms, lightning, and thunder. The deity came from Tula, on the central plateau of Mexico, and is associated with caves, cenotes, springs, and mountain tops—all believed to be guardians and holders of rain and maize in past and present Mesoamerican mythologies.

Tlaloc and Xipe Totec censers found in the cave are made of painted ceramic and limestone respectively. They represent deities that reached the Yucatán peninsula with the Toltec invaders. While relatively little is known about pre-Toltec deities and fertility gods of the Yucatán, the records indicate that the cave may have been the focus of a folk cult.



"Vessels and incense burners shaped as effigies of the rain god Tlaloc, whose grotesque, sneering face was molded in bas-relief on the clay itself." | Dennis Jarvis

THE ALTARS OF BALANKANCHÉ

The cave is a strikingly beautiful work of nature; the high place of a culture that consigned its myths and beliefs in its gods and deities to the mineral world. The central column is a reminder of the trunk of the Ceiba, the mythological 'Tree of Life' whose branches reach to the heavens, while its roots are sunk deep into Xibalba, the Maya underworld. The veneration of the 'Altar of the Tiger Priest', can only be understood in the context of the vision of a dual perception of life.

This impressive sanctuary created

by nature but conceived by man as an altar for its gods was walled toward the end of the Maya's Terminal Classic phase (850 - 1000 AD). The ceramics on the 'altar' are representatives of two non-Maya deities from the central plateau of Mexico. Twenty-nine large Tlaloc-effigy ceramic censers and Xipe Totec carved limestone censers were found on the mound of the altar, together with stone grinders and miniature ceramic plates, bowls, and other offerings, dated from 625 - 950 AD. Female Maya deities, Chak'Chel and Ix'Chel, representations of the waning

and waxing moon respectively, patrons of childbirth, sexuality, and fertility are present in the cave. Of note is the fact that ancient Maya deities always carry a binary function, essentially that of opposites.

The 'Altar of the Pristine Waters' (Group II) to this day holds a special place in Maya rituals. Archaeologists call the place the 'storeroom'. At the foot of the limestone columns were placed ceramic urns, set there to collect virgin water—called *zuhuy'ha* in Yucatec, that drips from the stalactites above.



Placating the Rain God at Cara Blanca

Hidden in the jungles of central Belize along the Yalbac escarpment is a series of 24 clear water cenotes, known as the Cara Blanca Pools. When droughts struck regions of the lowlands, the Maya came to these sacred pools to leave countless offerings to petition the rain god Cha'ac to bring forth rain and bountiful crops. They built a water temple complex and a ritual platform, where they burned and smashed hundreds of ceramic vessels and tossed precious goods into the pools in a desperate attempt to stave off drought and save their civilization.



"Carefully placed around the base of this unusual geological formation, said to be the "sacred tree inside the earth", were a great variety of ceremonial objects, offering to the rain god Tlaloc and left undisturbed through centuries of darkness." | Photo ©Dennis Jarvis



Dennis Jarvis/CC BY SA 2.0

Today, as in the past, zuhy'ha is believed to be the most sacred water in Maya rituals, since it is collected from stalactites, called the 'nipples of the earth'. It is sanctified because it never touches the ground and being transferred directly from nature (the rock) to culture (the manmade ceramic urns), it acquired the highest ritual value.

The importance of the rain god Cha'ac, and its multiple representations in Mesoamerican cosmology, essentially revolve around a simple word: water. The peninsula lies 19 degrees north of the equator. Its geographical location and lands further south enjoy only two seasons: dry and wet.

If the rains do not come on time, crops are short or fail entirely. Famine may then endure with its retinue of malevolent deities and social disruptions, together with hunger and the fear of tomorrow.

BALANKANCHÉ'S UNDERGROUND LAKE

On the underground lakeshore is Group IIIa, where archaeologists found a peculiar arrangement of small ceramic censers, plates, and small spindle whorls, as well as stone mini metates, and manos (mortars and pestles). How and

why they were displayed is not known, nor the reason for the assemblage and their respective numbers. Their small sizes are particular to Tlaloc offerings and they may have been used by small children.

Ethnographic accounts throughout Mesoamerica document miniature objects as offerings, often associated with rain-making rituals. Young children, particularly girls, were favored by Tlaloc, god of rain and thunder.

The 'Waterway' (Group IIIb) is mostly flooded now because it is located close to the top of the water table. The underground lake extends about 115 feet from the shore, then dips below the ceiling of the cave and turns northeast for another 330 feet, before rising again above the water table reaching Group IV, which is not accessible today. Investigators found ceramics and stone censers in the water and on limestone outcrops.

PASSAGES TO THE WATER POOLS

On the muddy floor of the waterway, archaeologists found scattered offerings. At least four passages lead to underground water pools, the main reasons for the cave's long period of use for this area, where the water table lay 65 to 76 feet below the surface.

Long before Tlaloc, the cave was used for the same purposes by its first tenant, Cha'ac, the Maya

deities in the cave, the Yum Balames, to safely allow non-Maya to enter the hallowed precinct.

THE WORLD BELOW

Caves were believed to be the place where humans were born and set forth on earth at the beginning of time and where they would return at the end of their days. The pyramids are the World Above, counter images of caves, the World Below, that are the sanctuaries of the endless cycle of



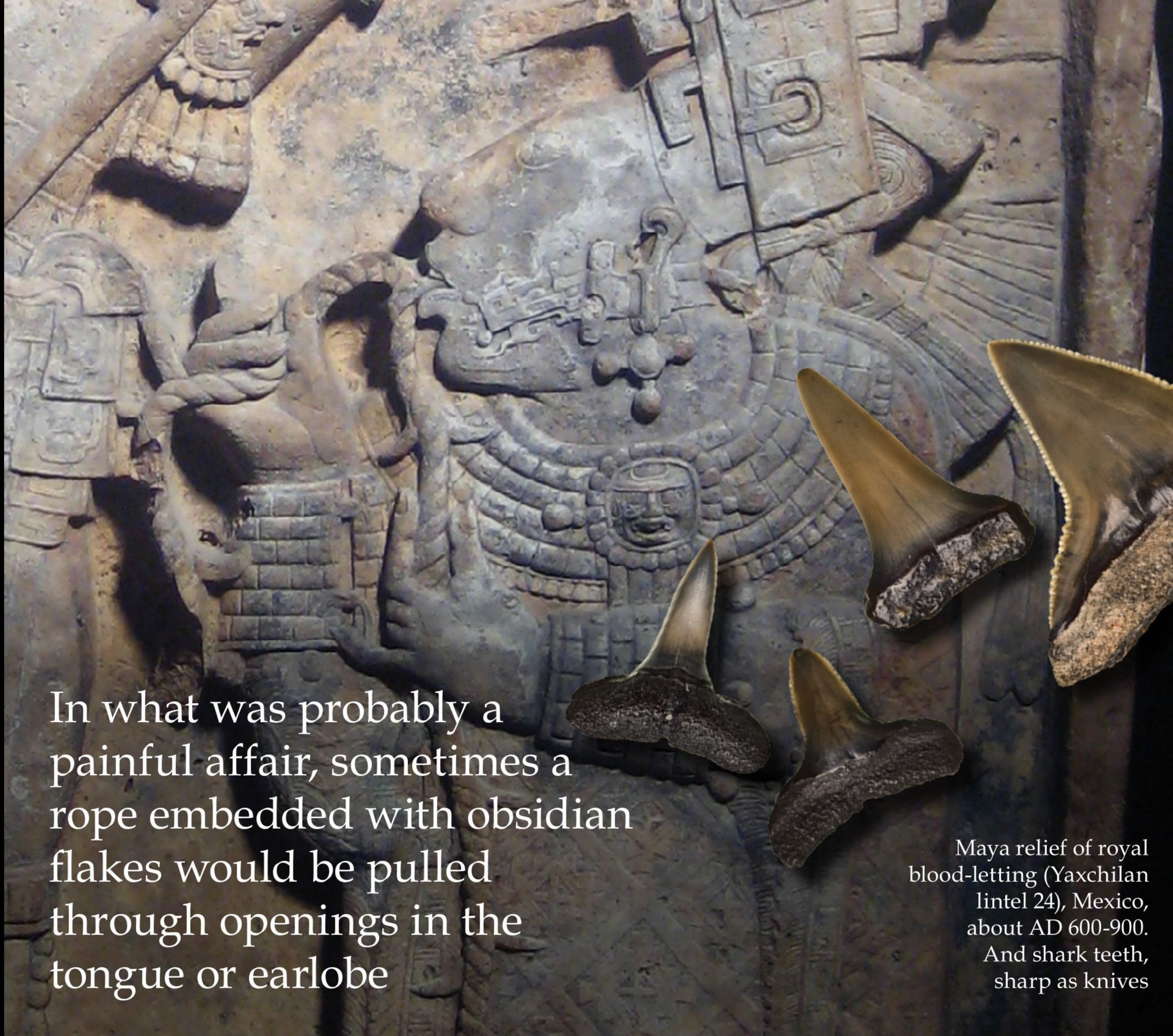
Dennis Jarvis/CC BY SA 2.0

rain deity. The cave was 'returned' to Cha'ac during a complex and elaborate ritual ceremony, the 'Reverent Message to the Lords' that started in the early hours of October 13, 1959, and lasted three days and nights. It was preceded by ancient rituals and ceremonies performed by Maya *h'men* or shamans from the neighboring villages, intended to pacify the

life and death. Each morning the rays of the sun, coming out of its travel in *Xibalbá* (the world below), lights the top of the pyramid first, as the blessing of Culture by Nature, to sanctify the powers vested in the lords and the priests by the gods.

No less than the sacred earth, caves are believed to be the meeting grounds between humans and the divine. ■

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The image features a background of a weathered stone relief from the Yaxchilan lintel 24, depicting a Maya ruler in a ritual pose. Overlaid on the right side of the image are four shark teeth of varying sizes, highlighting their sharp, triangular shape and serrated edges.

In what was probably a painful affair, sometimes a rope embedded with obsidian flakes would be pulled through openings in the tongue or earlobe

Maya relief of royal blood-letting (Yaxchilan lintel 24), Mexico, about AD 600-900. And shark teeth, sharp as knives

Five hundred years ago at a remote temple in Guatemala, sacrificial blood was spilled during cutting ceremonies using razor-sharp obsidian arrowheads.

Arrowheads with human blood on them found at a temple at the Zacpetén site in northern Guatemala revealed to researchers the ancient bloodletting ceremony. A person was cut with a sharp arrowhead made of the black volcanic glass, possibly through the tongue, earlobes, or genitals, in order to spill their blood and feed their “life force” to the gods.

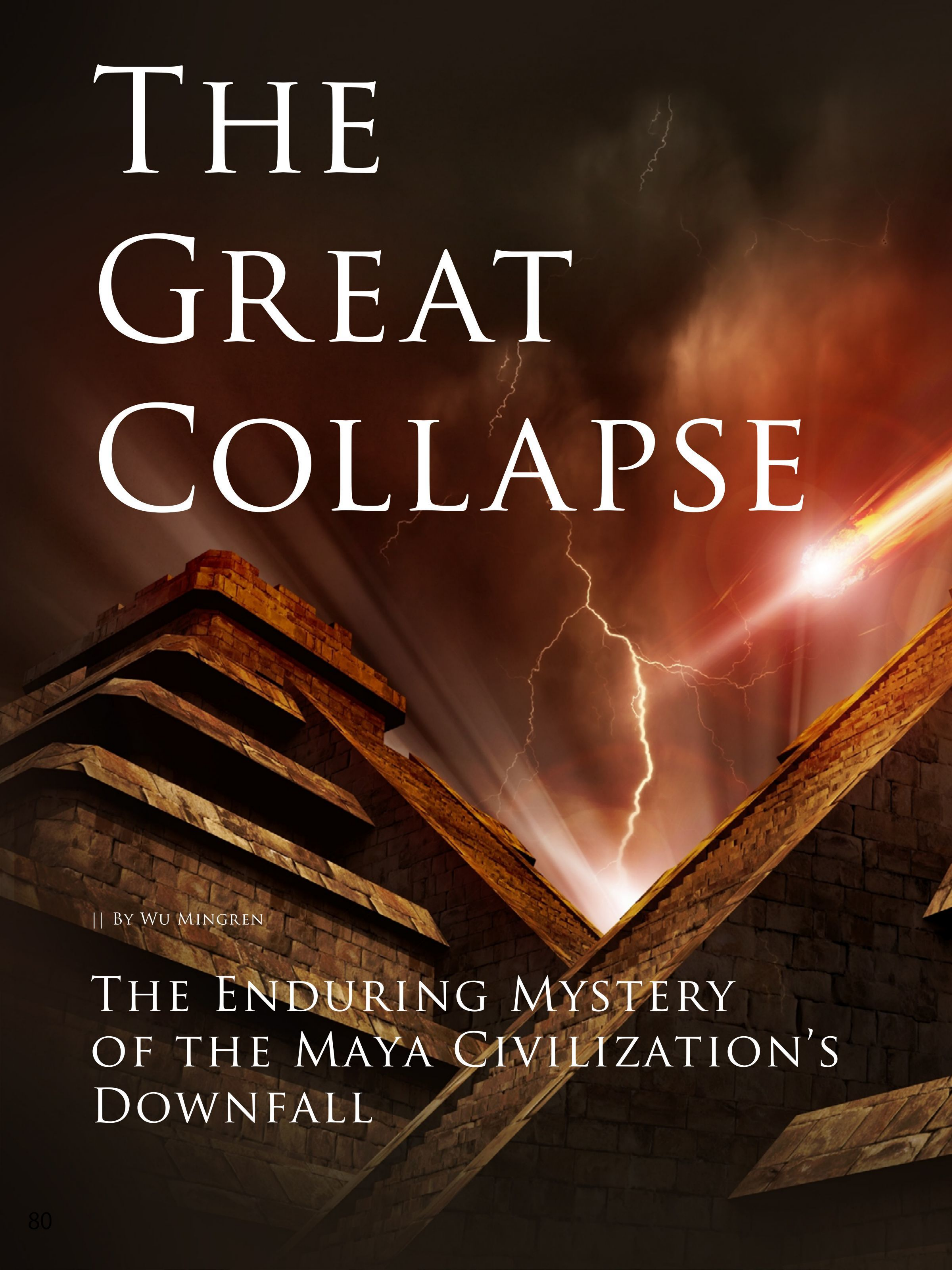
Beyond obsidian arrowheads, other ceremonial tools were used in the bloodletting, such as jade stone spikes, blades, stingray spines, thorns, or shark teeth. In what was probably a painful affair, sometimes a rope embedded with obsidian flakes would be pulled through openings in the tongue or earlobe.

In ancient Mesoamerican societies, ritual piercing or bloodletting played a crucial role in religious and cultural functions. Used as a tool by the ruling elites to legitimize political or social position, it also was seen as important to the well-being of a settlement.

After a soft body part was pierced or cut, the released blood was collected and burned—a ritual that symbolized the blood sacrifice ascending to the gods through the rising smoke. Ceremonies would be performed at any major event, including marriages, births, coming-of-age, burials, or even building dedications.

It is believed by researchers that those chosen to give blood probably did so voluntarily and survived the ordeal.

THE GREAT COLLAPSE



|| BY WU MINGREN

THE ENDURING MYSTERY
OF THE MAYA CIVILIZATION'S
DOWNFALL



Great civilizations
awash in traditions,
culture, knowledge,
technology, riches,
and the raw
power to make
global changes
have altered history and shaped the
face of the earth throughout time. So
how do these epic societies crumble
so fantastically? When it comes to the
Maya of Mesoamerica, it's still a puzzle.
Though there are some clues they left
behind.

The Maya civilization began in the
second millennium BC, but suddenly,
around the ninth century AD, the Maya
cities of the southern lowlands were
deserted one by one, leaving few traces
of what may have caused them to
abandon their homes.

THE RISE OF CITY-STATES AND KINGS

The Maya were concentrated in one
geographical region: the modern
area of southern Mexico, Guatemala,
northern Belize, as well as the western
parts of Honduras and El Salvador.
But this area was divided into three
sub-regions, each with its own
environmental and cultural differences.
These are the northern Maya lowlands,
in the Yucatán Peninsula, the southern
Maya lowlands, in northern Guatemala
and the adjacent parts of Mexico,
Belize, and western Honduras, and the
southern Maya highlands, in southern
Guatemala.





Suddenly, around the ninth century AD, the Maya cities of the southern lowlands were deserted one by one



Edzná is a Maya archaeological site in Mexico

The Maya were never a unified civilization. Instead, in each of the three regions, the Maya organized themselves into small states that were ruled by kings. Each of these states was centered on a city, which would effectively make them city-states.

The absence of a unified Maya civilization is also reflected in their language. The earliest Maya used a common language. By the Pre-Classic period, however, this single language had experienced a diversification. Today, there are about 70 different Mayan languages, spoken by around 5 million people.

The earliest Maya settlements have been dated to around 1800 BC. This marks the beginning of the Pre-Classic period, which lasted until around 250 BC. As time went by, the Maya began building ceremonial centers. By 250 AD,

these centers had developed into cities with temples, pyramids, palaces, ball courts, and plazas. The

emergence of such cities is considered the beginning of the Classic period. This is regarded as the peak of the Maya civilization and it lasted until around 900 AD.

As with many civilizations, politics and intrigue were cut-throat, conflict was common, and city-states and rival kingdoms feuded for control of the region. But that didn't slow the creation of impressive cities, monumental architecture, advanced astronomical understanding and calendars, glorious art and textiles, developments in agriculture, and sophisticated methods of food production.

They also devised the only known system of writing in Mesoamerica and recorded details of their history, lives, and gods; they inscribed deftly in stone and wrote on paper, forming richly-illustrated codices which have survived to this day.

More than 40 marvelous cities sprung up across their empire. Major sites that flourished during this period included Tikal, Palenque, Calakmul, and Copán.

But then it all went wrong.

By 900 AD records become spotty, but it is clear that dynasties were ending, cities were being abandoned, and there was a shift of activity out of the major centers. Since the 19th century, scholars and experts have debated what might have happened to cause this dramatic fall.

Was it too much warring? Famine or plague? A giant, erupting volcano? Had their renowned thirst for sacrificial blood and power over rivals set them on a course for destruction?

ABANDONING THE MAJOR MAYA CENTERS

Magnificent cities such as Tikal and Palenque went into decline around the 10th century, and were abandoned shortly after. The decline and abandonment of these cities are reflected in the archaeological record by the cessation of monumental inscriptions and the termination of large-scale construction projects. At Tikal, for instance, the site's last dated stela is placed at 889 AD. At Copán there is an incomplete monument commissioned by the city's last ruler, Ukit Took, but it was never completed and three of its four sides have been left bare.

Opposite: A vulture contemplates the ancient ruins of Tikal, in Guatemala.
Inset: A photo of Tikal from 1882, taken after vegetation had been cleared from the abandoned city







DID CLIMATE CHANGE CAUSE THE DEMISE OF THE MAYA?

The most popular theory for what caused the decline and fall of the Maya civilization is climate change. In particular, archaeologists have suggested that it was severe droughts that caused the collapse of the Maya. This theory gained popularity during the 1990s, when the first paleoclimate records of Central America were pieced together.

The climate records of a region may be obtained through speleotherms (known also as cave formations), in particular stalagmites. These are rocky spires on cave floors that are formed by the dripping of water and minerals (often calcareous in nature) from above. In theory, stalagmites grow faster during wetter years, and conversely, slower during drier ones. This is visible in the cross-section of a stalagmite, where a thicker ring indicates faster growth, and vice versa.

In more recent times, oxygen isotope ratio has been used as a means to estimate the amount of annual rainfall. For the purpose of paleoclimate research, there are two important types of oxygen isotopes – heavy and light. Water molecules containing the lighter isotope are more likely to evaporate and fall as precipitation. Therefore, layers of the stalagmite containing higher levels of light isotope indicate higher rainfalls.

Alternatively, paleoclimate records may be obtained from sediment cores. For example, a paper published in 2018 reports the findings made from the analysis of sediment from under Lake Chichancanab on the Yucatán Peninsula. The researchers found that between 800 and 1000 AD, annual precipitation fell by around 50% on average. In addition, during peak drought conditions, this decrease was as high as 70%. By contrast, at the beginning of the Classic period, the area

experienced conditions that were wetter than the previous thousand years, according to data obtained from Belizean stalagmites.

BAD CHOICES INCITED MORE PROBLEMS

The Maya themselves have been blamed for the climate change they suffered. Widespread deforestation has been identified as a significant factor. Wood was a natural resource in high demand among the Maya cities, as it was used to produce lime plaster through the heating of limestone.

To make three feet of this material, 20 trees had to be chopped down and turned into firewood. The widespread deforestation is evident in the absence of lime plaster on monuments towards the end of the Classic period. At Copán, for instance, the sixth-century Rosalila Temple is believed to be the last monument in the city to be decorated with stucco.



Photos: Maya ruins at Copán







Deforestation would have also been carried out to clear land for agricultural purposes, which was necessary considering the growing population of the cities.

As a consequence of deforestation, the flow of moisture from the ground is reduced, the natural rain cycle is disrupted, and precipitation is reduced. The reduction in precipitation made it difficult for the Maya cities to grow enough food and store enough water in their reservoirs for the dry season.

Lack of food and water would have angered the citizens, who may have turned on their elite. In some Maya cities, mass graves were found in which skeletons with jade inlays in their teeth were unearthed. This practice was reserved for the Maya elite, and may be a sign that the commoners took their frustration out on the elites by murdering them.

WAR ALSO SPREAD WHEN TIMES WERE TOUGH

Alternatively, these graves have been interpreted as a sign that the Late Classic period saw an intensification in warfare, which is another theory used to explain the civilization's demise. Before the Late Classic period, Maya warfare was normally ritualistic, limited in scope, and had strict rules of engagement. The main goal of warfare was the capture of elites for ransom and tribute. The participation of non-combatants was minimal.

During the Late Classic period, however, there is evidence that civilians, as well as elites, were slaughtered, and cities were destroyed by battles. This has led to the theory that increased warfare among

the Maya resulted in their downfall. In recent times, however, archaeologists have found evidence that such violence occurred even before the Late Classic period, calling into question warfare as a major factor leading to the demise of the Maya.

NO SIMPLE SOLUTIONS

Retired professor and Maya researcher Leonide Martin argues that there remains “no single reason why the Mayas abandoned their cities during the ninth-10th centuries AD”. Various factors affected different Maya regions, some declining rapidly while others lingered over centuries.

“Factors associated with the collapse include overpopulation, competition for resources, ideological decline with failure of the kingship system, drought, and environmental degradation; all leading to malnutrition, disease, lowered birthrate, social disintegration. Warfare and sudden destruction only occurred in a few cities,” Leonide Martin explained.

Although the climate-change/droughts theory is a favorite explanation for the demise of the Maya, droughts were not entirely new to them. The Maya simply made adaptations to deal with these harsher periods. For instance, reservoirs and intricate drainage were developed to capture and store water, while elaborate terrace and irrigation networks were built to protect against soil runoff and nutrient depletion. Severe droughts towards the end of the Classic period, however, could have exacerbated other problems, such as war, civil unrest, starvation, and disease. A combination of problems may have brought the Maya civilization down.

Opposite: The discovery of the Bonampak murals, representing war scenes, contradicted ancient pacifist theories that idealized ancient Maya society.
| Museo Nacional de Antropología, Mexico City

WAS THE CLASSIC PERIOD REALLY THE END?

While the end of the Classic period is often presented as the end or collapse of the Maya civilization, this is not entirely true. The Maya did not disappear from the face of the Earth. Today, for instance, there are over six million Maya living in Central America. Although the cities of the southern Maya lowlands were abandoned at the end of the Classic period, this did not happen in other parts of the Maya world.

In fact, the period from around 900 AD until the arrival of the Spanish during the 16th century is referred to as the Post-Classic period. During this time, the Maya continued to live in other parts of Mesoamerica. The Maya of the Yucatán Peninsula, i.e. the northern lowlands, for instance, continued to thrive after the demise of their brethren in the southern lowlands. One of the best examples of this is the site of Chichén Itzá, located on the Yucatán Peninsula.

LESSONS FOR THE FUTURE

The reason for the collapse of the Maya civilization, or more specifically, the Maya of the southern lowlands, is a question that continues to puzzle scholars today.

Since climate change was caused by widespread deforestation and was undoubtedly a factor in their demise, the fall of the Maya may be read as a warning against climate change caused by human activity.

Researchers continue to explore the ancient sites to glean some explanation through the artifacts and stories left behind. We may never know what truly happened, but this enduring mystery is as compelling and profound as the ancient Maya culture itself. ■

The Maya did not disappear from the face of the Earth

Maya woman performing a ritual in front of the Santo Tomás church in the town of Chichicastenango, in Guatemala



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DNA







The God King

At the time of the decline of the Seleucid Empire in 162 BC, a small independent kingdom of Commagene established itself in Armenia and their King Antiochus I Theos (the 'God King') constructed this monument to the gods at Nemrut Dag (Mount Nemrut) on the eastern Taurus mountain range. Antiochus claimed ancestry from Alexander the Great (West) and Darius of Persia (East). Not only did he proclaim himself a god, but he attempted to gather all the known gods on Mount Nemrut on the eastern and western terraces of the mound. The statues represent Antiochus I, the All-Nourishing Commagene, Zeus-Oromasdes, Apollo-Mithras-Helios-Hermes, and Artagnes-Herakles-Ares. ■

THE PLAIN OF JARS

A MEGALITHIC MYSTERY
IN LAOS || BY JOANNA GILLAN



THE Plain of Jars in the Xieng Khouang plain of Laos is one of the most enigmatic sights on Earth. The unusual scattering of thousands of megalithic jars across nearly one hundred sites deep in the mountains of northern Laos has fascinated archaeologists and scientists ever since their discovery in the 1930s.

The unusual site known as the Plain of Jars is dated to the Iron Age (500 BC to 500 AD) and is made up of at least 3,000 giant stone jars up to 10 feet tall. Most are made of sandstone but there are others carved out of much harder granite and limestone. One of the big mysteries about the site is how the massive jars, some weighing up to 10 metric tons, were dragged from the quarry to be placed in groupings over six miles away.



Because most of the jars have lip rims, it is presumed that all of them were originally covered with lids. And although a few stone lids have been recorded, it is more likely that the main material used for the coverings was wood or rattan.

It is assumed that the constructors used iron chisels to manufacture them, although no conclusive evidence for this exists. Little is known of the people who carved the huge containers and the jars themselves give little clue as to their origins or purpose.

According to local legend, the jars were created by a race of giants, whose king needed somewhere to store his rice wine. The wine was to be consumed at a great feast to celebrate an illustrious military victory thousands of years ago.

Legend tells of an evil king, named Chao Angka, who oppressed his people so terribly that they appealed to a good king to the north, named Khun Jeuam, to liberate them. Khun Jeuam

and his army came, and after waging a huge battle on the plain, defeated Chao Angka.

Some specialists claim that the effort required to have made so many jars suggests they were designed to capture rainwater during monsoon season and later boiling it for use by caravans passing through the region.

That is one alternative, however, most archaeologists believe that the jars were used as funerary urns. Excavations by Laos and Japanese archaeologists in the intervening years has supported this interpretation with the discovery of human remains, burial goods, and ceramics around the stone jars.

Archaeologists have also found beautifully-carved discs with geometrical images of concentric circles, human figures, and animals, all of which were discovered buried with their decorated sides positioned face-down. Some researchers suggest they may have been burial markers.

**3000 JARS
dragged
from 6 miles
away**

**They're
HUGE:
Up to 10'
TALL**

**Some
weigh
10
METRIC
TONS**

One of the big mysteries about the site is how the massive jars, some weighing up to 10 metric tons, were dragged from the quarry to be placed in groupings over six miles away





It is believed that the jars were used to place the corpses of deceased people; where they were left to decompose or 'distill,' a practice that has been common in Thailand and Laos, usually in pits. The bodies were perhaps left in the jars for the soft tissue to decompose and the body to dry out before being cremated. Once they had been cremated, the ashes would have been returned to the urns, or perhaps buried in a sacred place, freeing the jars for re-use to decompose another body.

Nevertheless, it is possible that the human deposits were made much later than the time the jars were produced, and that their use as funerary urns was not the original function for which they were created.

Archaeologists still don't have all the answers, and unfortunately, their work is slowed by the fact that the Plain of Jars is one of the most dangerous archaeological sites in the world. Scattered over the plains are literally thousands of tons of unexploded bombs, land mines, and other military ordnance. These munitions contaminate more than 35% of the province's total land area and continue to threaten the lives of the 200,000 people who now live in Xieng Khouang. ■

Oliver Spalt/CC BY SA 2.5



Plain of Jars
with Hmong girls



Rusty metal bomb casings and defused unexploded ordnance found in Phonsavan, Xieng Khouang Province, Laos.

Recent Findings at the Plain of Jars

In 2016, archaeologists Dougald O'Reilly and Nicholas Skopal, from the Australian National University, and their colleagues announced the discovery of 15 new sites containing 137 new examples of the massive jars.

The new sites showed that the distribution of the jars was wider than previously thought. The discovery brought the total number of jars to over 400, which led the archaeologists to conclude that there may be thousands more spread across the entire site.

Recent digs have revealed 18 more examples of human remains, of which over 60% were infants or babies. Researchers also established that almost half of the children had died when they were in early infancy or still fetuses. Studies of the fetal remains revealed that a number of them had a tooth enamel defect indicative of disease or famine.



HISTORY

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and we are destined to
become part of it

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FIRE IN THE SKY

THE PERSEIDS METEOR SHOWER

FIRE in the sky is an expression often used in modern songs, but few know that it refers to meteor showers. Our ancient ancestors were much more aware and in touch with the celestial panorama. In a chaotic world, ancient sky-watchers searched for meaning in the cosmic order, and not only did they believe the gods descended from the planets, but they calculated calendars and aligned their most impressive constructions, such as megalithic circles, temples, ziggurats, and pyramids with the constellations.

In our modern world illuminated with city lights, we miss out on the dazzling display the ancient gods present to us every night. How many of us will attend the invitation to a particularly spectacular live show on August 12-13, 2020?

The Perseids meteor shower is associated with the comet Swift-Tuttle. It is named after the Perseus constellation because, in 1835, Adolphe Quetelet identified the point from which they appear to hail - called the radiant - in this constellation. In 1866, after the perihelion passage of Swift-Tuttle in 1862, the Italian astronomer Giovanni Virginio Schiaparelli discovered the link between meteor showers and comets.

As the ancients found consolation that the gods were keeping an eye on them from above, later

religions also attributed folklore to astronomic phenomena. For instance, Catholics have interpreted the Perseid meteor shower as the 'tears of St Lawrence'. In August 258 AD, Roman Emperor Valerian ordered the persecution of Christians, which led to the martyrdom of seven deacons of Rome, including Pope Sixtus II. One of the deacons, St Lawrence, succumbed on August 10, 258, when he was burned alive. This is the origin of the Mediterranean legend that the shooting stars appearing around August 10 are the sparks of the fire and the cooled embers appearing under plants are known as the Coal of St Lawrence.

I met a man from London once who told me how scared he was the first time he experienced a dark night with stars, when he was 18 years old, in the army, and posted out in a rural area. Perhaps our ancient ancestors would consider us unsophisticated and undeveloped when it comes to cosmic insights? Don't fret, take a blanket, lie on the grass, watch the sky, and in the early morning or late evening of August 12-13 you might just see up to 40 to 50 meteors per hour at the shower's peak; and if you miss that one, at predawn on October 21-22 you can see the Orionid meteor shower associated with Halley's comet. ■



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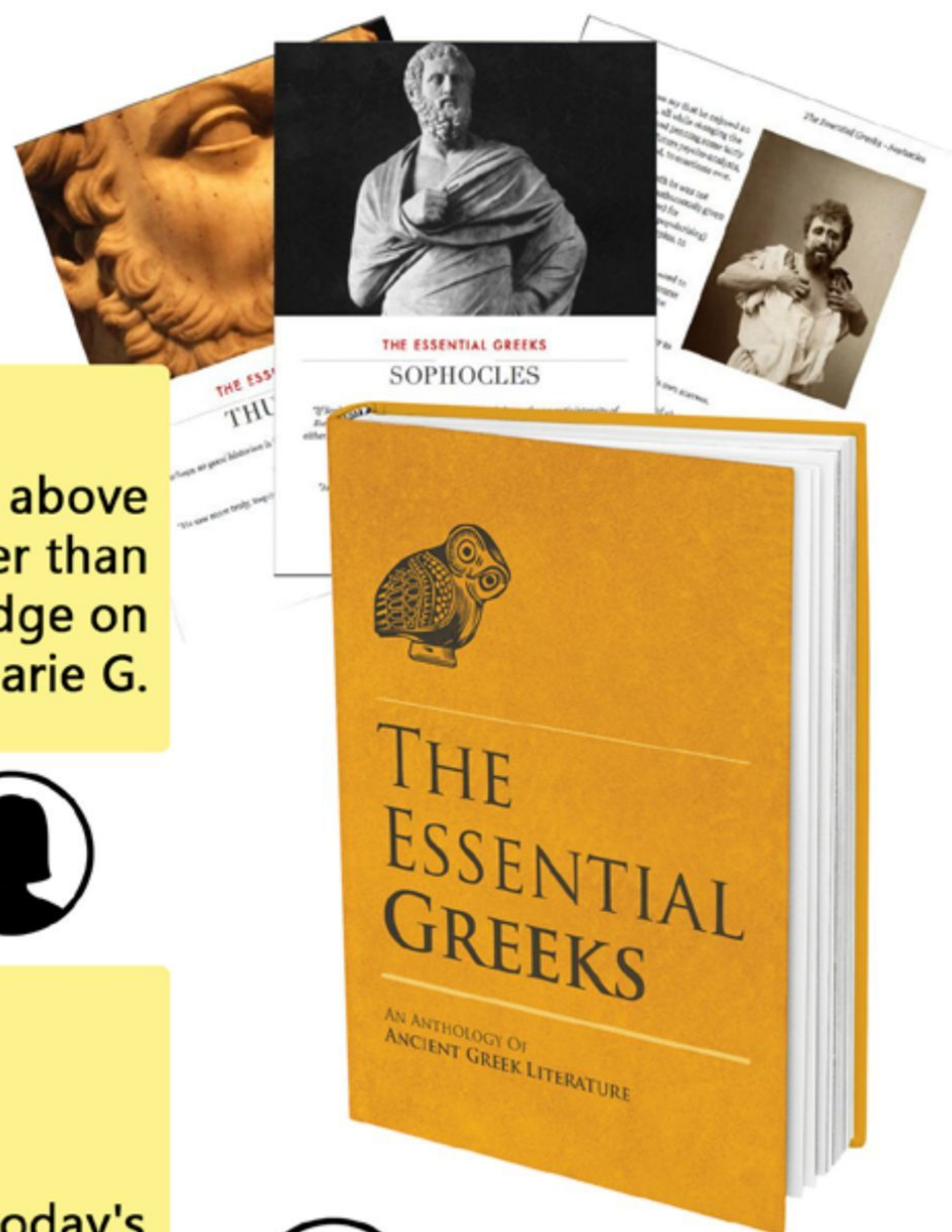


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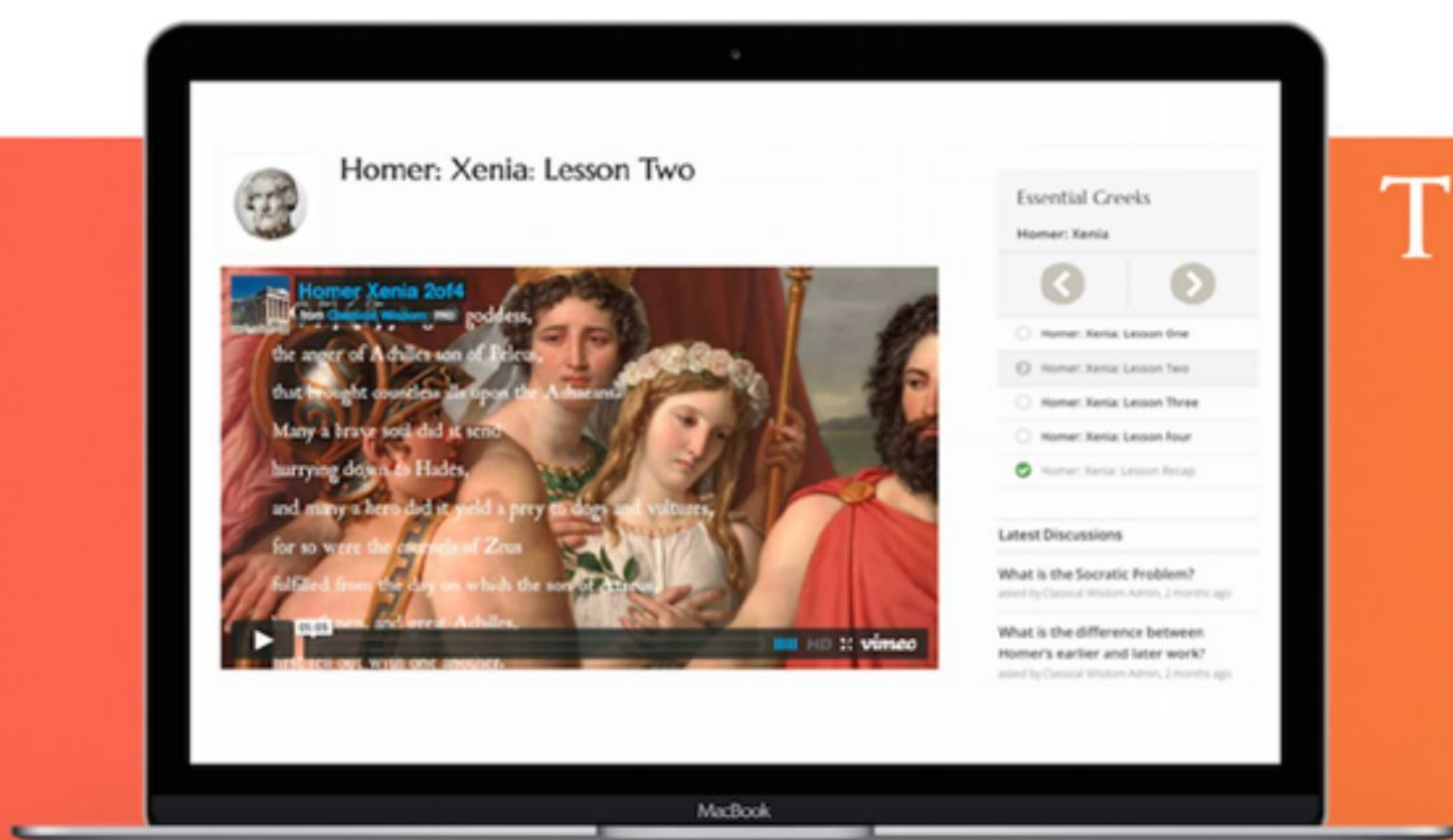
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Elaborate designs adorn unique monoliths in Quiriguá, an ancient Maya site in south-eastern Guatemala. Immense stelae are hailing past rulers, and huge stones are carved with majestic beasts and curious creatures. The stelae help tell the stories of Quiriguá, but the zoomorphs also hint at forgotten mystical beliefs.

It is unclear when Quiriguá was founded, though its history has been closely linked to the nearby city of Copán. As a trading port of Copán, the rulers of Quiriguá would control the trade along the Motagua River. The taxes collected in Quiriguá would be sent to Copán. In 738 AD, however, a ruler of Quiriguá by the name of K'ak' Tiliw Chan Yopaat rebelled against his Copán overlord. The rebellion was successful, and the king of Copán, Uaxaclajuun Ub'aah K'awiil, was captured and beheaded. Thus, the people of Quiriguá gained their independence.

It was during this period that most of the stone monuments in Quiriguá were erected, perhaps as a demonstration of the city's strength and prosperity. The monoliths were carved out of sandstone by Maya stonemasons who had no access to metal tools, which is an amazing feat. It is even more so when one considers the intricate designs that cover them.

One of these stelae, known as Stela E, is said to be the largest monolith erected in the New World. These stelae contain a wealth of information, not only from the Mayan hieroglyphs



MARVELOUS MONOLITHS OF QUIRIGUÁ

|| BY WU MINGREN

carved onto the sides, but also in the iconography of the figures presented on them.

Other stone monuments at Quiriguá are the zoomorphs, animalistic figures carved onto sandstone blocks. A wide variety of zoomorphs were created at Quiriguá, many of which have survived over the centuries, and can still be seen at the archaeological site. As an example, Zoomorph N depicts a turtle shell with a skeletal head on each end. One of the heads is said to represent a deity of the Maya Underworld.

The most enigmatic and important zoomorph, however, is the one known as Zoomorph P (seen at top), which is also the largest at the site. On one side, the figure of the king, Sky Xul, is depicted resting between the jaws of a mythical turtle, possibly representing a re-enactment of the creation

of man. On the opposite side is the Cosmic Monster, known as Itzamna. According to one of the stelae, Itzamna tied



Zoomorph B, 1902

the three stones of creation together to create the sacred throne for the ruler of the new mankind. Therefore, considering these two images together, it may be speculated that Zoomorph P was made to highlight the link between kingship and creation.

The hieroglyphs on the monoliths of Quiriguá were deciphered in the 1970s, providing immense insight into Maya history and their religious beliefs. ■

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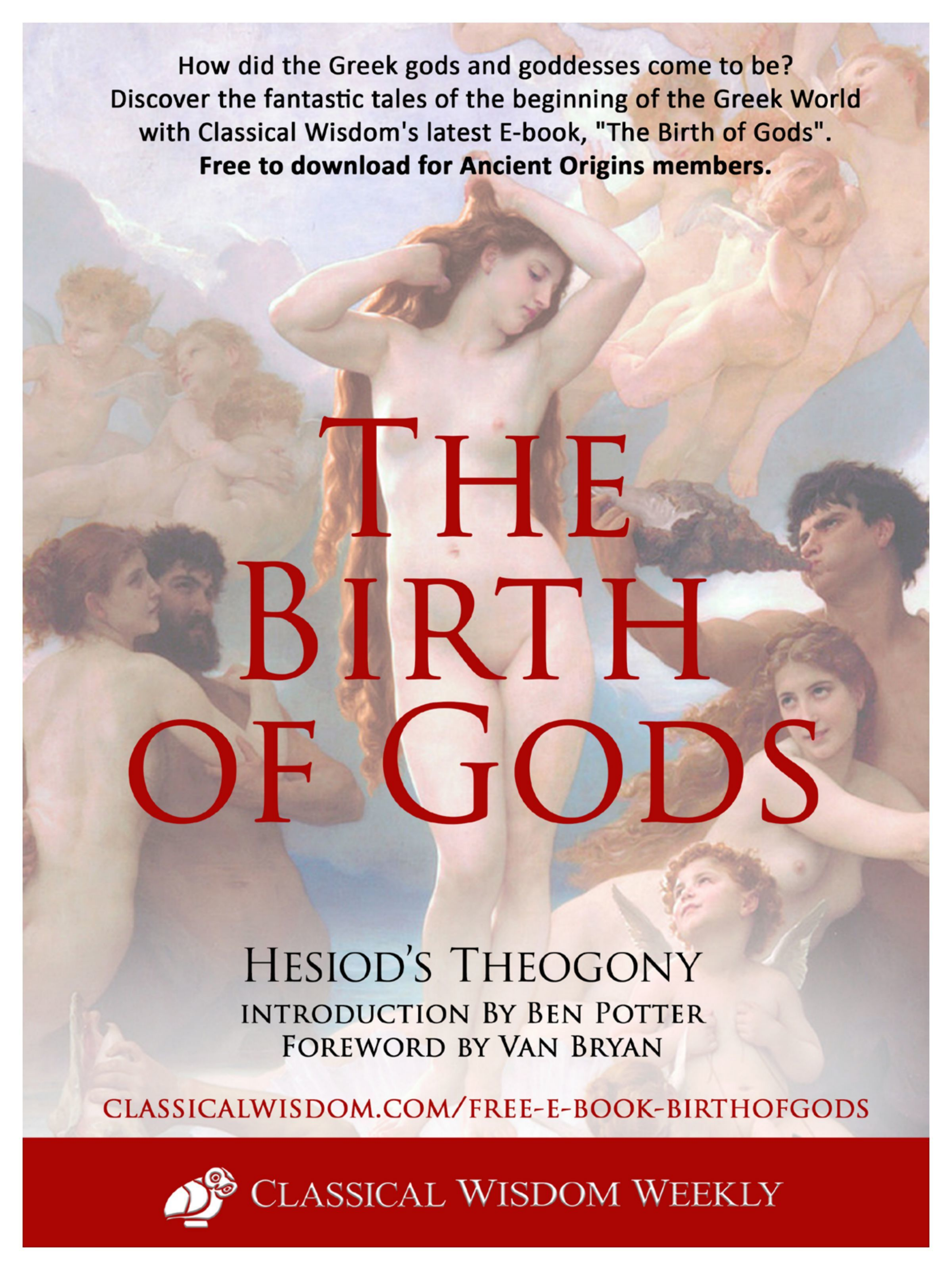
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The background of the entire page is a reproduction of Sandro Botticelli's painting 'The Birth of Venus'. It depicts the goddess Venus emerging from a seashell, surrounded by other figures like Zephyrus and Cupid, with a landscape in the background.

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HESIOD'S THEOGONY
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**ALICIA
MCDERMOTT**

Alicia is a researcher, editor, and writer with Ancient Origins. She's a lifelong learner and has worked in education, tourism, and anthropology. Traveling throughout Bolivia, Peru, Colombia, and Ecuador, Alicia has increased her knowledge of Pre-Colombian sites as well as life in modern Andean cultures.

Many of the ancient peoples around the world believed food was given to humanity from the gods for their survival. Some of the foodstuffs that they consumed were considered so special, tasty, nutritious, and/or unique that these items were considered “gifts of the gods.” For the ancient Maya people, chocolate, or

xocolatl as they called it, fit that extraordinary role.

Archaeologists have traced the cultivation of chocolate back to at least 900 AD in Mesoamerica. But the way it was consumed back then was not as a sweet, melt in your mouth, piece of heaven or a creamy decadent dessert as we enjoy it today; for the ancient Maya, and later Aztecs, chocolate was more of a smooth, bitter, energizing drink. *Xocolatl* (sho-coh-LAH-tl) translates to ‘bitter water’ and it also gave us the English word ‘chocolate.’

Although the Aztecs later transferred *xocolatl* to an elite treat for the royals and priests, for the Maya, this drink was believed to be a gift for all humans, so it was available to people in every social standing. This was an energizing drink that was consumed daily, much like a morning coffee greets many of us today, but it also served ritual and healing



A Spicy Chocolate Drink from the Maya Gods to You!

purposes. For example, the ancient Maya believed chocolate had the power to help cure asthma, angina, cancer, anemia, fatigue, headaches, fever, upset stomachs, wounds, and laryngitis.

The Maya and Aztec people both believed that this drink had the power to alter the brain and open the mind to the spirit world. Cacao’s significance can be noted by the fact that the Maya had a deity just for this bean. The cacao god Ek Chauh was honored annually in an event that included offerings of cacao beans, ritual dancing, and blood sacrifices.

When the Spaniards met the Aztecs they found storerooms full of cacao. This new food undoubtedly sparked curiosity, but the conquistadors were not impressed with the bitter drink they tasted. In fact, they almost left cacao in the Americas. But the ultimate decision to take

They believed that this drink had the power to alter the brain and open the mind to the spirit world

some back to the Old World was a choice that changed food history! Over in Europe, people decided to combine cacao with sugar, a sweetener that the ancient



Mesoamericans did not have at the time. Milk was substituted for water to create a creamy drink that people could not get enough of. By the 1700s, sweetened chocolate drinks were being enjoyed in dainty cups in European “chocolate houses.” From then on, the demand for chocolate and sugar was cemented, transforming both products into global goods that people desired over many other foods.

Today, the indigenous Maya people still drink a hot chocolate recipe that is based on the favored beverage of their forebears. Often you will see the Spanish colonial influence and find sugar and milk in a cup of hot cocoa in Mesoamerica today, but the ancient beverage still warms the hearts of many people in Central America as they continue the ancient tradition at their tables.

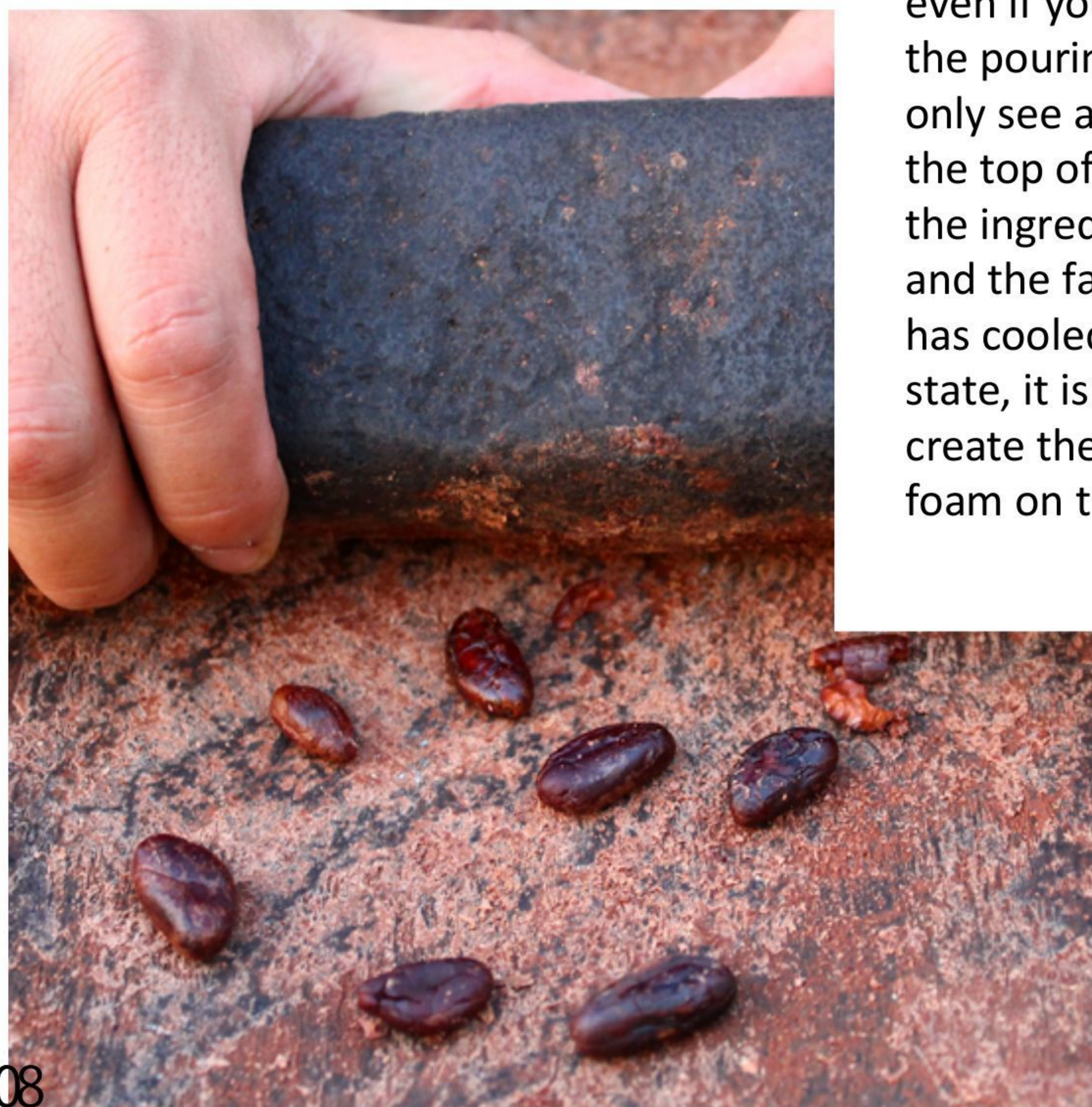
Put Your Money Where Your Mouth Is

The Maya sometimes used cacao beans as a form of currency and dozens of murals depict the beans being given to monarchs as a form of tribute. Over time, cacao beans took on monetary functions within the context of expanding marketplaces among rival Maya kingdoms.

The flavor of this recipe may take some getting used to if you are more accustomed to the creamy European take on hot chocolate, but chocolate lovers will be happy to know that this recipe lets the richness of the bean stand out more than any other flavor. The little spicy kick of chili pepper gives additional depth and enhances the beverage.

The drink tastes a little sweeter when it is warm and all the ingredients are competing for your taste buds' attention. But if you let it cool and drink it with the foam, the flavors calm, and the bitterness is slightly enhanced—but so is the energy it provides!

Aztec warriors so believed in the energizing properties of xocolatl that they drank it before going into battle to get extra strength and courage. Legends say that the Aztec king Montezuma also guzzled down 50 goblets of xocolatl before he visited his lovers so he had the stamina to be with many women in a night. Maya couples also believed in the powerful aphrodisiac properties of this drink and they sipped it during their marriage rituals. Crushed cacao beans were combined with crushed maize and served in a ceremonial ceramic jug at these events.

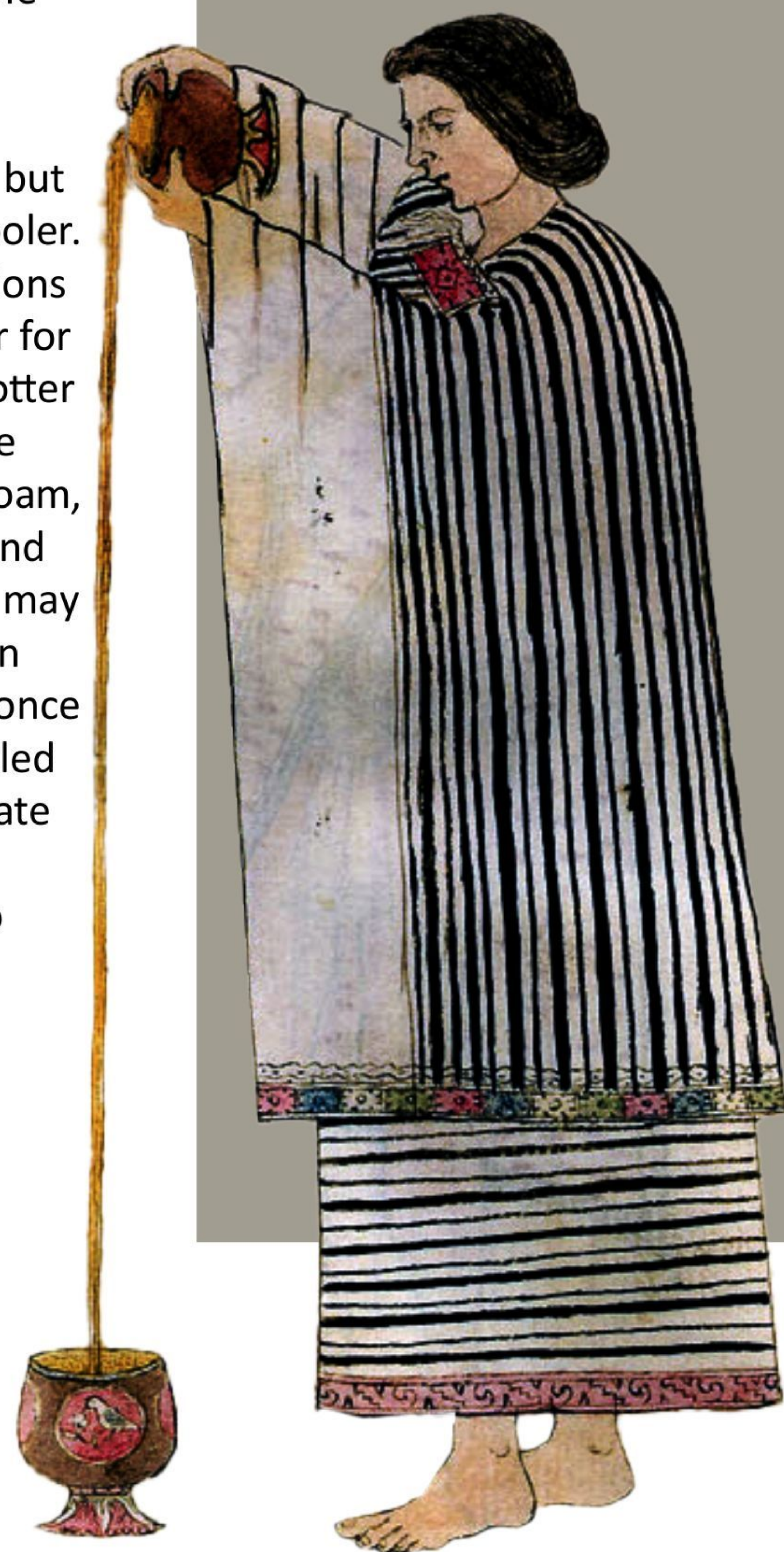


These days, drink mixes or chocolate bars labeled as “Maya chocolate” or “Aztec chocolate” generally contain cinnamon and sometimes black pepper alongside the chili pepper. Only the latter of these flavorings was used in the preparation of the ancient drink. Back then, a simple xocolatl recipe would often include hot water, ground and roasted cacao nibs, chili, and sometimes roasted maize, honey, vanilla, or a spicy plant known as the ear flower. After everything was mixed, someone would pour the liquid from one vessel at a height into a larger one resting on the ground – this cooled the drink and also made the foamy top of the beverage.

The Maya were said to prefer their xocolatl hot, but the Aztecs liked theirs cooler. You should try both versions and see which you prefer for taste and texture. The hotter xocolatl takes much more effort to provide a nice foam, even if you use a whisk and the pouring method you may only see a few bubbles on the top of your cup. But once the ingredients have settled and the fat in the chocolate has cooled into a denser state, it is much easier to create the highly valued foam on the drink. ■

An Aztec woman generates foam by pouring chocolate from one vessel to another, 1553

The Maya drank their xocolatl hot, but the Aztecs liked theirs cooler. You should try both versions and see which you prefer



HOW TO MAKE Xocolatl

INGREDIENTS

2 cups water

5 ounces unsweetened chocolate, cut into small pieces

2-3 teaspoons of honey, to taste

1 pinch of dried red chili, to taste

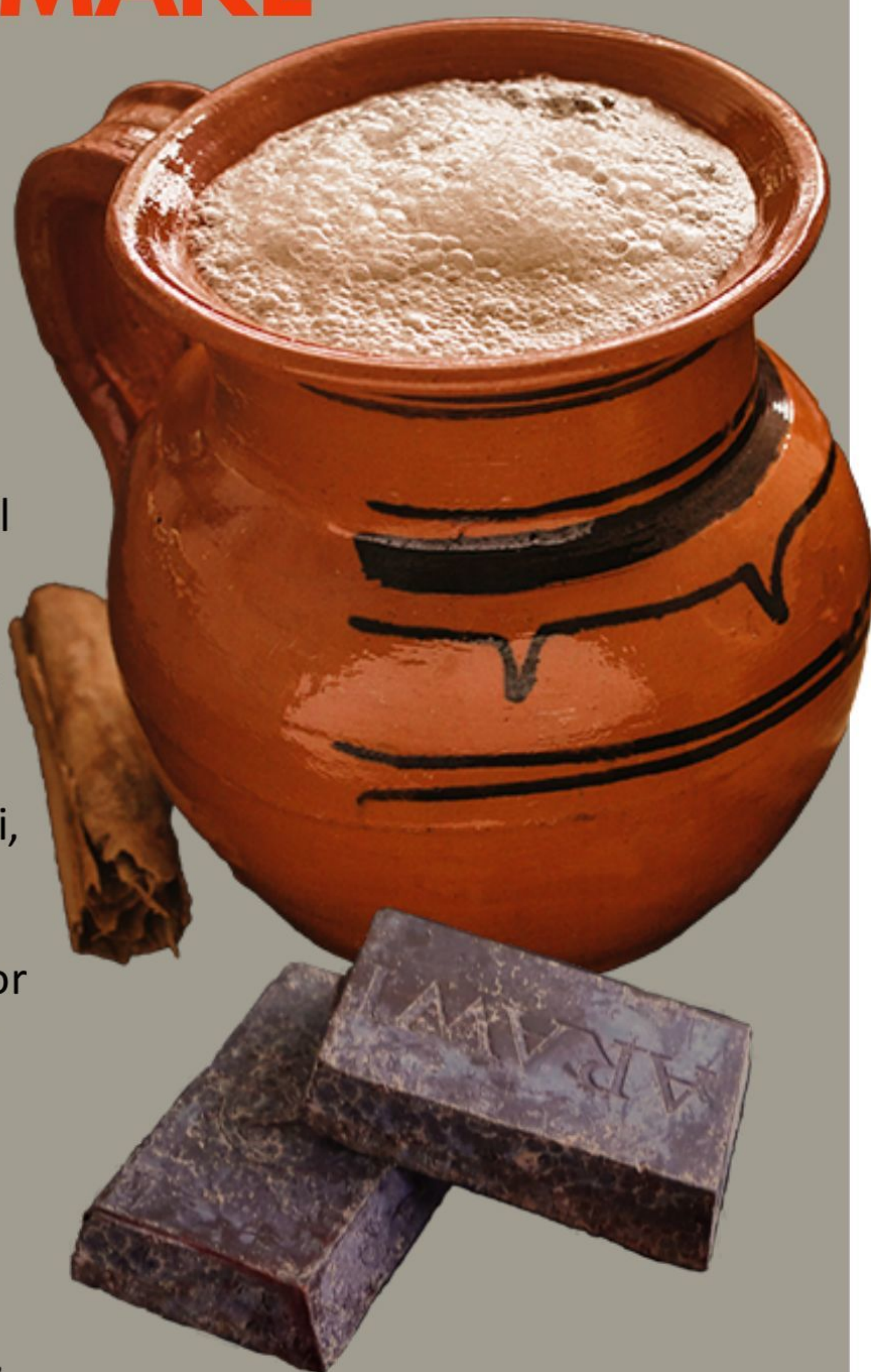
1/2 tsp vanilla extract (or 1 vanilla bean pod, split in half lengthwise)

METHOD

Bring the water to a boil in a large saucepan. Add the vanilla and lower the heat to medium. When bubbles appear around the edge of the saucepan, reduce the heat, add in the chocolate pieces and honey, and then whisk until the chocolate is melted.

Turn off the heat and remove the vanilla bean if you used one. Whisk the mixture vigorously to create a light foam effect. If desired, pour the drink from one cup to another to increase the foam and cool the drink. Sprinkle the dried chili pepper on top and serve.

Note: If the drink is too strong and you want to thin it, add a little milk, but remember doing so will change the chocolate from an ancient Mesoamerican beverage to a European style hot chocolate! ■



Caution! **HOT** Peppers

Chili Peppers are one of the oldest foods cultivated in the Americas. They are native to Central and South America, where they have been consumed since 7500 BC. Scholars believe that the spiciness of chili may be the plant's attempt to protect itself. Unlike mammals, which chew the seeds, destroying them, and feeling the burn of the capsaicin, birds do not feel the spicy taste and can consume the seeds and spread them. Christopher Columbus called chilis "peppers" because the spiciness reminded him of the hot taste of black pepper. In the 16th century, chili peppers were brought into Asia by European traders, where they were soon added to the local cuisine.

Ku méejtech nitsil!

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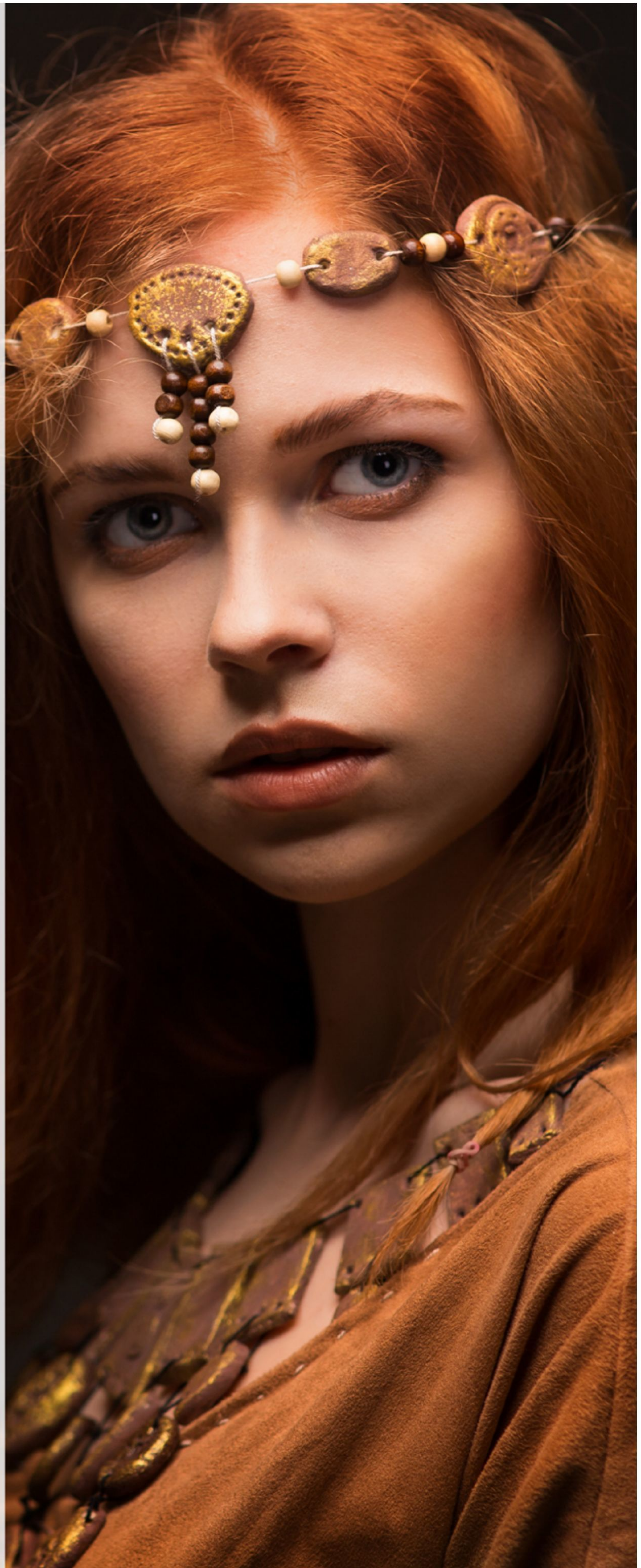
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